

**LUMMI NATION
SPILL PREVENTION AND RESPONSE PLAN**



October 2005

Version 1.1

LUMMI NATION
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Prepared for:

**Lummi Indian Business Council
(LIBC)**

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EXECUTIVE SUMMARY

Large amounts of crude oil, petroleum products, and other hazardous materials are transported and stored on or near the Lummi Indian Reservation (Reservation). These hazardous materials are transported by ships, pipelines, trucks, and railroad and are used, produced, and/or stored throughout the Reservation area, particularly in the Cherry Point Heavy Impact Industrial Zone just north of the Reservation. Accidents, equipment failure, and human error have the potential to result in large spills and disastrous human and environmental consequences. Some of these hazardous materials are toxic to people and animals if inhaled or contacted. Oil and chemical spills or releases to waters on or adjacent to the Reservation have the potential to destroy some of the most productive and valuable ecosystems in the world. Spills or releases of petroleum products, chemicals, or other hazardous materials to land can threaten public safety, public health, and the environment. To date, there has not been a large hazardous material spill on the Reservation that has impacted Lummi Nation Waters. However, future residential and economic growth on the Reservation, in the adjacent Cherry Point Heavy Impact Industrial Zone, and in areas upstream from the Reservation will increase the risk of a hazardous material emergency on the Reservation. Because of the potential consequences, it is important for the Lummi Nation to develop and implement a plan to effectively respond to a hazardous material spill or release on and/or adjacent to the Reservation.

The Lummi Nation finds that hazardous material spills on and adjacent to the Reservation have a direct, serious, and substantial effect on the political integrity, economic security, health, and welfare of the Lummi Nation, its members, and all persons present on the Reservation. Further, the Lummi Nation finds that those activities that potentially increase the frequency or severity of damages from hazardous material spills, if left unregulated or unaddressed, will eventually cause such damages. Accordingly, the Lummi Natural Resources Department (LNR) is developing the Lummi Nation Spill Prevention and Response Plan (SPRP) for the Reservation. The purpose of this SPRP is to guide current and future efforts to effectively reduce the potential for damage from hazardous material spills on the Reservation and, in coordination with other jurisdictions as appropriate, to reduce the potential for damage from spills near the Reservation or that cross the Reservation boundaries.

The following actions are intended to reduce the probability of hazardous material spills and to improve the Lummi Nation's response to spills:

- Implement the Emergency Planning and Community Right to Know Act (EPCRA) on the Reservation through the formation of a Tribal Emergency Response Commission (TERC). A Lummi Nation TERC would coordinate and implement emergency response activities according to EPCRA including acquisition of Federal grant funds, develop and review LEPC plans, and establish procedures for public information.
- The TERC should coordinate with the other area spill response organizations such as the Region 10 Regional Response Team, the Northwest Area Committee, the Washington State SERC, and the Whatcom County LEPC.
- Establish a Lummi Nation Spill Response Team. This team should consist of tribal members and staff who are familiar with the Lummi Nation Waters, shorelines, and tidelands and who can commit to participating in training and to incident response.

By establishing a designated team, training resources can be focused on a set group of people who will have the time, capability, and interest to provide effective response.

- Assess and acquire appropriate training for the TERC, the Spill Response Team, Lummi Indian Business Council (LIBC) personnel, and community members.
- Maintain inventory of communication and response equipment and upgrade as needed.
- Establish a schedule and conduct appropriate spill response drills.
- Develop or review Pollution Prevention Plans (P3s) for Reservation facilities as necessary.
- Establish and/or maintain appropriate coordination with the Whatcom County Division of Emergency Management (DEM) and other agencies.
- Establish Mutual Aid Agreements with Whatcom County DEM and facilities near the Reservation.
- Offer public education opportunities specific to hazardous materials spills such as the four-hour First Responder Awareness Level hazardous materials training.
- Develop a plan for providing spill information to Reservation residents through coordination of the LIBC Safety Office and the LIBC Communication Office with established Whatcom County DEM and radio public information procedures and public meetings.
- Continue to review and provide comments to the Northwest Area Committee and the Region 10 Regional Response Team on the Geographic Response Plans for adequate protection of tribal resources.
- Participate on the Washington State Department of Ecology Spills Program Resource Damage Assessment (RDA) committee or other appropriate groups for spills that impact the Reservation and the Lummi Usual and Accustomed hunting, fishing, and gathering grounds and stations to ensure consideration and best possible protection of tribal resources.
- Identify and pursue potential federal, state, and local funding for training, purchase of additional equipment, maintenance of existing equipment, and tidegate repair.

It is anticipated that these actions will be pursued in coordination with the LIBC Safety Office and the Lummi Nation Comprehensive Emergency Management Plan that is being developed by the Safety Office.

The best way to protect human health and the environment from hazardous materials spills and to minimize the costs of environmental protection and restoration is to prevent the release of oil or hazardous substances. In general terms, a prevention and response plan for spills of hazardous materials (spill prevention and response plan) is a set of

measures to prevent the release of oil or hazardous substances as well as a system of contingency plans that outline steps to be taken by local entities in the event of a spill, including individual responsibilities and a chain of command. Such a plan is designed for any incident involving hazardous material that, when uncontrolled, may be harmful to life, property, or the environment.

Preventing spills and minimizing damage from spills are important elements of spill plans. This SPRP represents a further step toward effective spill prevention and response for the Lummi Nation. The Lummi Nation has already taken significant steps including implementation of environmental, development, and construction regulations (e.g., the Land Use, Zoning, and Development, Water Resources Protection, Flood Damage Prevention, Building, and Solid Waste Control and Disposal codes) and review of spill prevention and response plans. In addition to existing federal regulations, implementation of development regulations and review of projects by the LIBC Technical Review Committee will continue to help reduce the potential for hazardous material spills, particularly smaller scale spills. The potential for larger scale spills primarily exists off-Reservation and is addressed by federal and state regulation.

The Lummi Nation can help protect its people and resources by reviewing spill prevention and response plans for facilities in the Reservation area, participating in their spill response drills, and by ensuring that pollution prevention plans are developed for facilities on the Reservation. Implementation of the proposed actions in this plan should significantly reduce potential spill damages on the Reservation. Consistent attention and adequate funding to implement these actions will be required to maximize the spill prevention and response benefits of protecting public health and safety, protecting cultural and natural resources, and protecting the political integrity, economic security, and welfare of Reservation residents.

1. INTRODUCTION

Hazardous pollutants are released into the environment from a variety of sources ranging from small businesses, motor vehicles, and farms to large oil refineries, power plants, and other industrial sources. Spills occasionally happen anywhere hazardous materials are handled or transported in the course of daily commerce. In Washington State, billions of gallons of oil and hazardous chemicals are transported through the Puget Sound region each year by ship, pipeline, rail, and road. According to the 2001 Annual Report of the Washington State Department of Ecology (Ecology), more than 16 billion gallons of petroleum oil product moves through the state annually. A large portion of this oil and fuel is transported by tanker ships and pipelines to and from two oil refineries that are located within five miles of the Lummi Indian Reservation (Reservation) and two other oil refineries located approximately 15 air miles from the Reservation. In the Reservation area, a total of over ten billion pounds of hazardous materials are shipped, stored, processed, or manufactured in or through Whatcom County each year (Whatcom County 2003).

The hazardous properties of chemicals, petrochemical products, radioactive substances, and other materials range from being a health threat to being dangerously toxic or explosive. The uncontrolled release or spillage of hazardous substances may pose a serious threat to life, property, and the environment. For example, the 1999 fuel spill and explosion from the Olympic (now BP Olympic Pipeline Co.) pipeline in Bellingham released more than 200,000 gallons of gasoline, killed three people, and caused extensive environmental damage. The incident highlighted the risk posed by petroleum transmission pipelines and the relative risks posed by storage and transport of large volumes of hazardous materials by other means.

The impacts of hazardous material incidents vary depending upon factors such as the materials involved, the quantity released, and the location of the incident relative to surface water, populated areas, transportation, and evacuation routes. Other factors include time of day and weather conditions. In the case of airborne hazardous material releases, wind speed and direction are very important, as well as the immediate response capability. In the Reservation area, the number of large fixed facilities using hazardous materials, the amount of hazardous materials being stored and/or transported, the proximity of local populations, and the existence of many environmentally sensitive areas combine to produce a high level of risk and vulnerability to hazardous material incidents. The variety of potential incidents and effects involving hazardous materials is such that the involvement of several government agencies and private industries is often required during the response to a specific incident.

1.1 DESCRIPTION OF THE LUMMI RESERVATION

As shown in Figure 1.1, the Lummi Reservation is located in northwest Washington at the mouth of the Nooksack River and along the western border of Whatcom County. The Nooksack River drains a watershed of 786 square miles, flows through the Reservation near the mouth of the river, and discharges to Bellingham Bay (and partially to Lummi Bay during high flows). The Reservation includes the Nooksack and Lummi river deltas and all tidelands adjacent to upland areas of the Reservation. In addition to riverine and coastal floodplain areas, the Lummi Reservation has two relatively large

Figure 1.1 Regional Location of the Lummi Indian Reservation

forested upland areas and a smaller forested upland area on Portage Island. The Reservation includes approximately 12,500 acres of uplands and 7,000 acres of tidelands. The Reservation is located at the southern extent of the Strait of Georgia and the northern extent of Puget Sound. Approximately 38 miles of highly productive marine shoreline surround the Reservation uplands on all but the north and northeast borders. The Reservation features relatively low topographic relief and a temperate marine climate.

The Reservation waters (a.k.a. Lummi Nation Waters) contain significant resources for both the Lummi Nation and the region. Numerous economically and culturally important species, including herring, salmon, oyster, manila clam, little neck clam, butter clam, horse clam, and Dungeness crab, are present in Lummi Nation Waters. Estuarine waters of the Nooksack and Lummi River deltas form the interface between marine water and fresh water. Estuarine waters have a unique importance for fish habitat, as juvenile salmon reside in these waters during their acclimatization to saltwater and adult salmon during their acclimatization to fresh water. Because these water resources are vital for economic stability, growth, and the cultural and spiritual life of the community, the potential contamination of Lummi Nation surface waters has a direct, serious, and substantial effect on the health and welfare of the Lummi Nation, its members, and all persons present on the Reservation.

In addition, because of the geographic and hydrogeologic conditions in the area, ground water resources on the Reservation are vulnerable to pollution. Over 95 percent of the residential water supply for the Reservation is currently pumped from local ground water wells. The contamination of these aquifers would adversely affect the health of persons drinking or using water from these supplies. Ground water resources are vulnerable to contamination from agricultural, residential, municipal, commercial, and industrial land uses. Ground water contamination could lead to the loss of the primary potable water supply source for the Reservation because water supply wells are difficult to replace, ground water contamination is very expensive to treat, and some damages to ground water caused by contamination may be impossible or unfeasible to mitigate.

Potential sources of hazardous pollutants to surface and ground waters in the immediate vicinity of the Reservation include oil refineries, an aluminum smelter, electrical generation plants, chemical factories, and other facilities. Many small businesses, such as dry cleaners or auto body paint shops, are also potential sources of contamination. There are numerous industrial facilities in very close proximity to the Lummi Reservation (e.g., ConocoPhillips refinery, Alcoa-Intalco Works aluminum smelter, Tenaska Washington Cogeneration facility, and BP Cherry Point refinery) as well as three wastewater treatment facilities (i.e., Ferndale, Lynden, and Everson) with outfalls that discharge to the Nooksack River. There are several facilities that store pollutants within the Reservation (e.g., the two Lummi Tribal Sewer and Water District wastewater treatment plants, in-line chlorinators associated with water supply wells, Lummi Shell gas station, and Fisherman's Cove gas station/mini-mart) as well as a major interstate/international freeway, a railroad, oil and fuel pipelines, industries, and other potential contaminant sources within several miles of the Reservation boundaries. Future residential and economic growth on the Reservation, in the Cherry Point Heavy Impact Industrial Zone, and in the area upstream from the Reservation will increase the risk of a hazardous material emergency on the Reservation.

1.2 DEFINITION OF SPILL PREVENTION AND RESPONSE

Hazardous materials are substances that are toxic, corrosive, flammable, and/or explosive. This is a general description of hazardous materials that encompasses the many interconnected federal regulatory definitions. In many instances, hazardous materials have the potential to cause injury to life and/or damage to water and other environmental resources. In addition to accidental spills, hazardous materials may also be released as a secondary result of natural disasters such as earthquakes and floods or deliberately by someone dumping wastes or by an act of terrorism.

The best way to protect human health and the environment from hazardous materials spills and to minimize the costs of environmental protection and restoration is to prevent the release of oil or hazardous substances. In general terms, a prevention and response plan for spills of hazardous materials (spill prevention and response plan) is a set of measures to prevent the release of oil or hazardous substances as well as a system of contingency plans that outline steps to be taken by local entities in the event of a spill, including individual responsibilities and a chain of command. Such a plan is designed for any incident involving hazardous material that, when uncontrolled, may be harmful to life, property, or the environment.

Hazardous material spills are situations of a potentially serious nature, developing suddenly and unexpectedly, and demanding immediate action. There are four interrelated steps involved in reducing the frequency and potential effects of spills:

- **Prevention:** Spill prevention measures include proper storage and handling of materials, effective training for hazardous material handlers, adequate staffing of facilities, and an emphasis on safety.
- **Preparation:** Preparation includes having plans, trained staff, and response materials in place before an emergency occurs. Preparedness can reduce the likelihood that an emergency will occur and can also reduce the extent of a hazardous spill.
- **Response:** Response is how quickly a community can react to an emergency and should improve with preparedness. Rapid response is very important for reducing the impacts of a hazardous material emergency.
- **Recovery:** Recovery is how well events are managed to return the environment to a pre-accident condition. In general, recovery costs are minimized if the preparedness and response steps are performed well.

All four of these steps were the focus of federal legislation and the development of implementing regulations that address each step. The primary legislation and regulations are summarized in Section 2 and described in detail in Appendices A and B.

1.3 GOALS AND OBJECTIVES

The overall goal of this spill prevention and response plan is to minimize the adverse effects of incidents involving hazardous materials on or adjacent to the Lummi Reservation. Minimizing spill impacts is accomplished by proactively implementing spill prevention measures and, in the event of a spill, providing timely and competent response. Having a plan in place and practicing appropriate responses to hazardous

spills can prevent or minimize surface water, ground water, and other environmental contamination, thereby ensuring the highest feasible quality for water and other valuable environmental resources. Such actions will reduce or eliminate costly spill recovery efforts, potential loss of valuable resources, and the potential need to find expensive alternate sources of water. Having a good spill response plan in place is an element of proactive prevention that results from a better understanding of the consequences of improperly stored or handled hazardous substances.

This Spill Prevention and Response Plan (SPRP) is intended to help protect public health, public safety, and the environment on the Reservation by developing a spill prevention, preparedness, and response program that provides appropriate guidance to Lummi Indian Business Council (LIBC) staff and community members. This plan focuses on steps that are intended to prevent oil and chemical spills to Lummi Nation waters and lands, outlines steps that ensure effective response to spills of oil and hazardous substances, and details training requirements for key personnel.

1.4 ORGANIZATION OF REPORT

This plan is organized into the following five sections:

- Section 1 is this introductory section;
- Section 2 briefly describes the legal context of spill prevention and response and introduces federal, state, and local spill response plans and resources;
- Section 3 describes potential spill sources on and near the Reservation;
- Section 4 describes Lummi Nation spill prevention and response measures including recommendations for training and equipment, identification of potential funding sources, and a recommended action plan;
- Section 5 summarizes this SPRP.

The references cited in this plan and the acronyms and abbreviations used in this plan follow Section 5. The appendices attached to this plan contain supplemental information and the accompanying Spill Response Binder contains information, forms, and procedures to be used during a spill response.

2. FEDERAL, STATE, AND REGIONAL SPILL PREVENTION AND RESPONSE CONTEXT

This section gives a brief overview of the federal and tribal laws that direct spill prevention and response and the national, regional, and local level plans and resources that are available to the Lummi Nation. These laws and plans are outlined in Tables 2.1 and 2.2 and explained in further detail in Appendix A and B.

2.1 FEDERAL AND TRIBAL LAWS

The United States Environmental Protection Agency (EPA) is the primary federal regulatory agency responsible for the development of policies to protect the population and environment of the United States from adverse effects of pollution. The EPA is required by law to implement the requirements of many congressional acts, including four that are particularly important to spill prevention and response: the Clean Water Act (CWA), the Emergency Planning and Community Right-to-Know Act (EPCRA), the Oil Pollution Act of 1990 (OPA), and the Clean Air Act (CAA). Additionally, Titles 15, 15A, 17, and 18 of the Lummi Nation Code of Laws include provisions to protect the Lummi Nation Waters from hazardous substance spills.

The focus of the Clean Water Act (CWA) is on reducing pollution to the waters of the United States. The CWA pertains to spill prevention and response by authorizing the determination of quantities of oil that would be harmful if discharged; requiring the development of the National Oil and Hazardous Substances Pollution Contingency Plan or National Contingency Plan (NCP), to minimize damage from oil discharges; and establishing the Oil Pollution Prevention regulation which requires the Spill Prevention, Control, and Countermeasure Program (SPCC) and the development of Facility Response Plans. The Oil Pollution Prevention regulation requires owners and operators of regulated facilities to prepare a Facility Response Plan (FRP) and the SPCC program seeks to prevent oil spills from certain aboveground and underground storage tanks. The CWA also establishes the National Pollutant Discharge Elimination System (NPDES) to regulate discharges of all pollutants to waters of the United States¹. The 1987 amendments to Section 518 of the CWA authorized the EPA to treat qualified Indian tribes as states by delegating regulatory authority for specified sections of the Act. Delegated activities include the authority to grant water quality certifications (§401), to grant discharge permits under the NPDES (§402), to grant dredge and fill permits under §404, and to set water quality standards under §303 (Slade and Stern 2004).

The focus of the Emergency Planning and Community Right-to-Know Act (EPCRA) is on helping local communities protect public health and safety and the environment from chemical hazards. To implement EPCRA, Congress required each state to appoint a State Emergency Response Commission (SERC). Each SERC was required to divide their state into Emergency Planning Districts and to name a Local Emergency Planning

¹ Waters of the United States include all waters currently or historically used for interstate or foreign commerce, including waters subject to the ebb and flow of tides and many lakes, rivers, streams and wetlands.

Table 2.1 Summary of Federal and Tribal Laws

Law	Spill Type	Summary
Water Pollution Control Act Amendments of 1972 (Clean Water Act or CWA)	All pollutants	<ul style="list-style-type: none"> • Focuses on reducing water pollution. • Established the National Pollutant Discharge Elimination System (NPDES). • Developed the National Contingency Plan (NCP). • Authorizes the EPA to delegate authority to tribes. • Includes the Oil Pollution Prevention Regulation.
Emergency Planning and Community Right-to-Know Act (EPCRA) 1986	Toxic chemicals	<ul style="list-style-type: none"> • Designed to help local communities protect themselves from chemical hazards. • Requires each state to appoint a State Emergency Response Commission (SERC). • Requires SERCs to divide states into Emergency Planning Districts with a Local Emergency Planning Committee (LEPC) for each district. Tribes can appoint a TERC. • Has 4 major provisions: planning, notification, reporting, and inventory.
The Oil Pollution Act of 1990 (OPA)	Oil	<ul style="list-style-type: none"> • Provides national planning and preparedness provisions for oil spills. • Expanded the NCP into a three tiered approach: <ul style="list-style-type: none"> ○ Federal government directs public and private response efforts. ○ Area Committees develop location-specific Area Committee Plans. ○ Vessel and facility owners/operators prepare facility response plans. • Created the Oil Spill Liability Trust Fund to provide cleanup funds.
The Clean Air Act (CAA) 1970	Hazardous air pollutants (HAPs)	<ul style="list-style-type: none"> • Gave the EPA the authority to list and regulate Hazardous Air Pollutants (HAPs). • Requires the EPA and OSHA to issue regulations for chemical accident prevention. • Requires certain facilities to prepare a Risk Management Program (RMP). • Eligible tribes can apply to EPA for authorization to administer the RMP program.
Lummi Nation Code of Laws Title 15, Land Use, Zoning, and Development Code	All pollutants	<ul style="list-style-type: none"> • Forms the Technical Review Committee which reviews land use permit applications and stipulates project design standards and best management practices that reduce the potential for hazardous materials spills. • Limits where land use activities that store, use, or generate hazardous materials can be located on the Reservation
Lummi Nation Code of Laws Title 15A, Flood Damage Prevention Code	All pollutants	<ul style="list-style-type: none"> • Aims to minimize flood damage to treaty protected resources. • Requires service facilities (which may contain pollutants) to be floodproofed. • Requires on-site waste disposal systems to be located to avoid damage and contamination to floodwaters.
Lummi Nation Code of Laws Title 17, Water Resources Protection Code	All pollutants	<ul style="list-style-type: none"> • Prohibits unauthorized discharges to Lummi Nation Water. • Provides for wellhead protection. • Provides storm water management requirements. • Provides stream and wetland management regulations. • Requires the establishment of water quality standards to protect Reservation surface waters.
Lummi Nation Code of Laws Title 18, Solid Waste Control and Disposal Code	Solid waste	<ul style="list-style-type: none"> • Provides for proper control and disposal of solid wastes on the Reservation. • Makes dumping of solid waste into the water unlawful. • Prohibits the accumulation of solid waste. • Prohibits landfills on the Reservation.

Committee (LEPC) for each district. Similarly, tribes can appoint a Tribal Emergency Response Commission (TERC) to coordinate and implement emergency response activities.

These tribal, state, and local organizations implement the four provisions of EPCRA: planning, reporting, notification, and inventory. One aspect of the reporting provision is the requirement for certain facilities to annually submit a hazardous chemical inventory in the form of a Tier I or Tier II report. Washington State requires facilities to submit Tier II reports which include chemical name, quantity, storage, and location. The inventory provision requires certain facilities to complete and submit a Toxic Chemical Release Inventory (TRI) form annually for specified chemicals. The TRI requirement was expanded by the Pollution Prevention Act of 1990 which requires facilities that submit TRI reports to develop Pollution Prevention Plans (EPA 2004b). These plans are intended to reduce hazardous substance use and hazardous waste generation.

The Oil Pollution Act (OPA) of 1990 provides planning and preparedness provisions for oil spills similar to the provisions that EPCRA provides for extremely hazardous substances. These provisions include the expansion of the NCP into a three-tiered approach (federal, area, and owners/operators), the creation of the Oil Spill Liability Trust Fund, increased penalties for noncompliance, broadened federal responsibility for response and enforcement, and preservation of state authority to establish laws governing oil spill prevention and response. The OPA plans offer an opportunity for the LEPCs formed in compliance with the EPCRA to coordinate their plans with area and facility oil spill plans covering the same geographical area (EPA 2003a).

The Clean Air Act gives the EPA the authority to list air toxins for regulation and then to regulate these chemicals. The 1990 Clean Air Act amendments include a list of 189 hazardous air pollutants (HAPs) selected by Congress on the basis of potential health and/or environmental hazard. To improve spill prevention and response, the 1990 CAA amendments also require the EPA and OSHA to issue regulations for chemical accident prevention. Under CAA Section 112(r), all chemical facilities with processes that exceed a threshold quantity for one of 77 acutely toxic substances (such as chlorine and ammonia) or one of 63 highly volatile, flammable substances (when not used as a fuel) must develop a Risk Management Plan (RMP) to identify and evaluate hazards and manage those hazards safely. These facilities must submit a summary of the RMP to the EPA or its delegated agency. The SERCs, TERCs, and LEPCs can access off-site consequence analysis (OCA) information about facilities that have submitted an RMP (EPA 2002). Tribes that the EPA finds eligible for treatment in the same manner as a state under the CAA Tribal Air Rule (40 CFR Part 49) can apply for authorization to administer the RMP program.

Lummi Nation laws that relate to spill prevention and response include the Land Use, Zoning, and Development Code (Title 15), Flood Damage Reduction Code (Title 15A), the Water Resources Protection Code (Title 17), and the Solid Waste Control and Disposal Code (Title 18) of the Lummi Nation Code of Laws. The Land Use, Zoning, and Development Code works to prevent spills of hazardous substances by land use zoning and land use permitting processes. The Flood Damage Reduction Code works to prevent spills of hazardous substances by placing requirements on structures built within the floodplain and therefore keeping associated hazardous materials out of the floodplain and out of flood waters. Title 17 works to protect the surface and ground

water of the Reservation from the adverse effects of pollution and includes permit requirements for discharges, the establishment of sanitary control areas around wells and springs, prohibition of landfills in Wellhead Protection Areas, and a permit requirement for activities that would introduce pollutants to wetlands or result in a physical or chemical change of wetland water quantity and quality. The Lummi Natural Resources Department administers the Water Resources Protection Code, Title 17 of the Lummi Nation Code of Laws, as part of its Comprehensive Water Resources Management Program (CWRMP). Title 18 prevents spills to Lummi Nation Waters by making dumping of solid waste illegal, prohibiting the accumulation of solid waste, and prohibiting the construction of landfills on the Reservation.

2.2 SPILL RESPONSE RESOURCES

The National Contingency Plan (NCP) is the federal plan for responding to both oil spills and hazardous substance releases. It is the result of efforts to develop a national response capability and promote overall coordination among the hierarchy of responders and contingency plans. The NCP describes the National Response System (NRS) and establishes the National Response Team (NRT) and the 13 Regional Response Teams (RRTs). The NCP provides the framework for the NRS and establishes how it works. The NRS is a multi-layered system of individuals and teams from local, state, and federal agencies; industry; and other organizations that share expertise and resources to ensure that oil spill control and cleanup activities are timely and efficient and that activities minimize threats to human health and the environment (EPA 2003b). The NRS includes four levels of contingency planning (federal, regional, area and local, and site-specific industry) that guide response efforts and provides a framework for coordination among these levels (NRT 1998).

The hierarchical, cross-jurisdictional approach of the NRS is the result of the application of the Incident Command System/ Unified Command (ICS/UC). ICS is a standardized on-scene incident management concept designed specifically to allow responders to adopt an integrated organizational structure

National Contingency Plan (NCP)

- Required by the CWA and expanded by CERCLA and OPA
- Federal plan for response to oil and hazardous substance releases
- Provides national response capability
- Promotes coordination among responders and plans
- Establishes the NRT and 13 RRTs
- Describes the NRS

National Response System (NRS)

- Coordinates agencies for a focused response
- Includes four levels of contingency planning: federal, regional, area, and local
- Requires development of Regional Contingency Plans by RRTs
- Is 3-tiered: NRT, RRT, OSC

National Response Team (NRT)

- Chaired by EPA, USCG serves as Vice-Chair
- Membership of 16 federal agencies
- Three major activities
 1. information distribution
 2. emergency planning
 3. emergency training
- Manages the NRS
- Operates the NRC
- Monitors Regional Response Teams

Regional Response Team (RRT)

- Develops RCP to define roles of responders
- Co-chaired by EPA and USCG
- Provides assistance as requested by OSC
- May request assistance from NRT

Area Committees

- Develop Area Contingency Plans with detailed response information
- ACP must be consistent with local LEPC response plan

Table 2.2 Summary of Federal, State, and Local Spill Response Resources

Jurisdiction	Resource	Summary
Federal Plans and Resources	National Contingency Plan (NCP)	<ul style="list-style-type: none"> • The federal plan for oil and hazardous substance spill response • Provides the framework for the National Response System – a hierarchical system for multi-jurisdictional response
	Incident Command System (ICS)	<ul style="list-style-type: none"> • An on-scene incident management concept that divides response efforts into five functions • The structure for the NCP
Regional Plans and Resources	Northwest Area Contingency Plan (NWACP)	<ul style="list-style-type: none"> • Serves as the Regional and Area Contingency Plans for the Northwest • Developed by the Region 10 RRT
	Geographic Response Plans (GRPs)	<ul style="list-style-type: none"> • Provides specific response plans for public waters • Seeks to protect sensitive natural and cultural resources
	Pacific States/ British Columbia Oil Spill Task Force	<ul style="list-style-type: none"> • Created by Memorandum of Cooperation between the province of BC and the states of AK, WA, OR, CA and HI. • Provides a shared commitment to protect marine resources
State Plans and Resources	Ecology Spill Prevention, Preparedness, and Response Program	<ul style="list-style-type: none"> • Carries out activities and programs for spill prevention, response, and assessment including the Resource Damage Assessment committee.
Local Plans and Resources	Whatcom County LEPC	<ul style="list-style-type: none"> • Produced a Hazardous Materials Plan in compliance with EPCRA
	Whatcom County Specialized Emergency Response Program	<ul style="list-style-type: none"> • Public/private cooperative effort • Administers a Hazmat Unit, the Major Incident Support Team (MIST), and the Community Alert Network (CAN).
Facilities and Vessels	Facility and Vessel Response Plans	<ul style="list-style-type: none"> • Details pollution response action plans
	Risk Management Plans	<ul style="list-style-type: none"> • Outlines prevention and response plans for facilities with large volumes of hazardous substances

equal to the complexity and demand of any single incident or multiple incidents without being hindered by jurisdictional boundaries (NRT date unknown). The National Contingency Plan states that the NRS will function as an ICS under the direction of the federal On-Scene Coordinators; its use is also endorsed by the National and Regional Response Teams (NRT and RRT). In 1980, federal officials transitioned ICS into a national program called the National Interagency Incident Management System (NIIMS) and its use has since been endorsed or mandated by many federal agencies (NRT date unknown). The ICS divides emergency response into five manageable functions: command, operations, planning, logistics, and finance and administration. Unified Command (UC) is a structure that brings together the incident commanders established by ICS of all major organizations involved in the incident to coordinate an effective response to large, multi-jurisdictional incidents.

The Northwest Area Contingency Plan (NWACP) is the response plan developed by the Regional Response Team for Region 10 (Washington, Oregon, and Idaho) and serves as the Area and Regional Contingency Plan (ACP and RCP) under the NRS. The Northwest Area Contingency Plan (NWACP) identifies resources at risk, response resources, and cleanup strategies within its area. Although they are distributed and revised separately, one component of the NWACP is the Geographic Response Plans (GRPs) which identify sensitive resources in the region and describe and prioritize response strategies to protect these resources (RRT 2002). The Lummi Reservation area is covered by the North Puget Sound GRP (see Appendix F). A second regional plan is the Pacific States/British Columbia Oil Spill Task Force created by a Memorandum of Cooperation between Alaska, Washington, Oregon, and California and the Canadian province of British Columbia.

At the state level, the Washington State Department of Ecology's Spill Prevention, Preparedness, and Response Program implements state laws pertaining to oil and hazardous substance spills. The Program carries out both spill prevention and response activities such as vessel inspections, operation of the Neah Bay Rescue Tug, review of facility plans, 24-hour statewide response, and natural resource damage assessment. Locally, the Whatcom County Local Emergency Planning Committee (LEPC) has developed a Hazardous Materials Plan that satisfies the community planning provision of EPCRA. Whatcom County also operates the Specialized Emergency Response Program (SERP) Team, the Major Incident Support Team (MIST), and the Community Alert Network (CAN). The Lummi Nation has coordinated with the Whatcom County Division of Emergency Management (WCDEM) during past spill response efforts. Future coordination should benefit both jurisdictions.

The final tier of plans forming the National Response System is Facility Response Plans and Vessel Response Plans. These are required for oil cargo handling facilities or vessels. These plans detail pollution response action plans for the specific facility or vessel, and must be submitted for review and approval to the EPA or USCG, depending on the threat to the environment. Facilities that store large volumes of highly flammable or toxic chemicals are also required to develop and implement Risk Management Plans (RMPs) in compliance with the Clean Air Act that outline how the facility will prevent and respond to a release. These vessel and facility plans represent the first line of defense against the impacts of a hazardous materials spill.

The National Response Team has developed an Integrated Contingency Plan (ICP or "One Plan") Guidance document that provides a way to consolidate the multiple plans that a facility may have prepared to comply with various regulations into one functional emergency response plan. Facilities near the Reservation that have prepared ICP response plans and/or Clean Air Act Risk Management Plans include:

- British Petroleum (BP) Cherry Point Oil Refinery (formerly ARCO)
- ConocoPhillips Oil Refinery (formerly Tosco/Mobil)
- ALCOA-Intalco Works Aluminum Smelter
- Tenaska Cogeneration Plant
- Georgia-Pacific West Paper Mill
- BP Olympic Pipeline (Gasoline, Jet Fuel)
- Terasen Pipeline (Crude Oil)
- Cascade Natural Gas Pipeline

3. POTENTIAL SPILL SOURCES ON AND NEAR THE RESERVATION

The Lummi Nation Wellhead Protection Plan, Phase I (LWRD 1997) inventoried potential sources and associated potential contaminants in the two wellhead protection areas on the Reservation and presented a community involvement plan. As part of this effort, a ranking system for the potential ground water contaminant sources was developed. The ranking system was based on three factors:

- Location of the potential source relative to ground water supply wells.
- The quantity of potential contaminants either on site or associated with the potential source.
- The hazard posed by the contaminants either to public health or the ground water resource.

The inventory in the Lummi Nation Wellhead Protection Plan included both point and non-point pollution sources. Point sources of pollution are commonly associated with a specific point of discharge or emission (e.g., a wastewater treatment plant). Non-point pollution sources, such as motor vehicles, animals, and atmospheric deposition, are generally diffuse and would not be the subject of a spill response effort. The inventory of potential pollution sources was updated and/or modified in the Lummi Reservation Storm Water Management Program Technical Background Document (LWRD 1998b) and the Lummi Nation Nonpoint-Source Assessment Report (LWRD 2001b). The potential sources in these inventories that could produce a large spill requiring a clean-up effort are described in this section. Contact information for on- and off-Reservation facilities that store or transport hazardous materials is listed in Appendix F.

3.1 ON-RESERVATION SOURCES

3.1.1 Lummi Tribal Sewer and Water District

The Lummi Tribal Sewer and Water District (LTSWD) distributes potable water to Reservation residents that are connected to the water system, and collects and treats wastewater from the Reservation at its two treatment plants, one each on the Lummi and Sandy Point peninsulas. Storm water runoff is not collected for treatment, except from the wastewater treatment plants where runoff from the asphalt is caught in basins designed primarily to catch overflows from the treatment process. Potable water is either pumped from wells on the Reservation or purchased from the City of Bellingham. The LTSWD is governed by a board of directors; four of the board members are elected and one is appointed by the Lummi Indian Business Council. Administratively, the quasi-autonomous LTSWD is a subdivision of the Lummi Nation Planning Department.

The LTSWD operates under a National Pollution Discharge Elimination System (NPDES) permit that was re-issued in 2004 by the EPA. Wastewater is treated to meet the standards set forth in the permit, which requires that fecal coliform colonies in discharged water not exceed 400 per 100 ml of water during once a week testing; that the average of four tests in a month not exceed 200 colonies per 100 ml; and that chlorine levels in discharged water may not exceed daily effluent concentrations of 0.65 mg (Sandy Point) and 0.52 mg (Gooseberry Point) of chlorine per liter.

The LTSWD currently uses chlorine to treat wastewater before it is discharged and expects to add ultraviolet treatment at the Gooseberry Point treatment plant in 2005. To meet the 2004 maximum daily effluent concentrations of 0.65 mg (Sandy Point) and 0.52 mg (Gooseberry Point) of chlorine per liter, the wastewater plants dechlorinate the water with sodium metabisulfite. The District keeps 2,500 pounds of sodium metabisulfite on hand for this process (McCourt 2005). The district also has approximately 400 pounds of fluoride for the fluoridation of drinking water (Solomon 2005).

A non-hazardous chlorine solution, similar to strong bleach, is used to treat water at the wellheads before it is delivered into the water system. However, very hazardous pure chlorine is used and stored in a maximum of six to seven 150-pound cylinders inside separate buildings at each wastewater treatment plant. These small block buildings are only used for chlorine storage and remain locked at all times. The storage building at each plant has an automatic chlorine leak alarm. There is one self-contained breathing apparatus located at each treatment plant, which is used as a safety measure each time a cylinder is changed (usually once a month). There is also a policy that there should be two employees present when the chlorine cylinders are changed, with the second employee prepared to pull the employee that is changing cylinders out of the building with a rope attached to his/her waist. When the Gooseberry wastewater treatment plant is switched to ultraviolet treatment, only two or three chlorine cylinders will be stored at this plant (Brionez 2004).

The LTSWD also has one 500-gallon diesel storage tank at each sewer treatment plant to power backup generators. In addition, the LTSWD currently has two 50-gallon diesel generator sets: one along Haxton Way and one on Cagey Road. The District also has one portable diesel generator and expects to add six propane generator sets along Lummi Shore Road in the future (McCourt 2005).

Potential municipal sources of ground water contamination include the sewer lines of the LTSWD. Although a sewer system protects ground water quality by replacing septic systems, municipal sewer systems are subject to leaks or malfunctions that could result in spills or overflows. Spills or leaks could also result from damage during construction activities or damage caused by natural events (e.g., floods, earthquakes). However, the alarm and emergency response system of the LTSWD should minimize the impact of any spills in its service area (LWRD 1997). LTSWD personnel must be prepared to respond to possible sewer line breaks or a spill of chemicals or bio-solids that occurs either on-site or during transport. All biosolids spills or leaks are responded to according to the LTSWD response procedures (Appendix F).

The LTSWD also operates the Lummi Nation Biosolids Application site, a dedicated and enclosed 12.5 acre forested site on the Lummi Reservation which is managed according to the Lummi Biosolids Land Application Site Operation Plan. Sewage sludge from both wastewater treatment plants is transported by truck to the site and applied by a spray cannon mounted on the rear of a tanker truck (LIBC 1996). The biosolids are tested annually for pollutants including fecal coliform and heavy metals. Any spills during transport from the plants to the site are responded to by following the LTSWD response procedure (Appendix F).

3.1.2 Fisherman's Cove

The LIBC owns the Fisherman's Cove mini-mart and a boat storage and launching facility at Gooseberry Point. The LIBC Fisherman's Cove pier is used to moor, unload, refuel, repair, and lift boats to and from the water. In addition, the Lummi Island ferry terminal operated by Whatcom County is adjacent to the commercial pier. In September 1986, and again in December 2002, a commercial fishing boat swamped at Gooseberry Point and sank at the dock as high winds and up to five-foot waves washed over the dock. A third fishing vessel was swamped in December 2004 while tied-up at the adjacent fish processing dock. In 1962, the Lummi Island ferry, Chief Kwina, sank during the Columbus Day windstorm. Incidents such as these pose a significant threat of fuel or oil spills. Since this location is a past and potential source of spills, and is close to important intertidal resources, it is an important target for spill prevention and response. With its shoreline location, the potential impacts of a fuel spill are greater at Fisherman's Cove than at the Lummi Shell gas station described below.

There is a gasoline pump at the Fisherman's Cove mini-mart and another pump on the pier with a hose extending to the water for boats. Both of these pumps are served by double-walled fiberglass pipes from a single underground double-walled fiberglass storage tank. This 12,000-gallon tank was installed in 1987 and is ventilated through a vent pipe that is approximately 12 feet above ground surface. There is also an aboveground propane storage tank at both the mini-mart and a short distance inland from the pier. Only the propane tank near the pier is used for sales to the public. No diesel fuel is stored at these facilities. Preventative measures at the mini-mart and pier, which meet all EPA regulations for Underground Storage Tanks (USTs) and retail fuel systems, include automatic shut-off valves on fuel lines and approved leak detectors and monitors on the gasoline tank. The gasoline system passed a comprehensive inspection most recently in 2003 (Roberts 2004).

Gasoline is supplied to the Fisherman's Cove tank by McEvoy Oil Company, which is responsible for cleaning up any spills from their trucks and carries spill kits on their trucks. In the event of a spill, McEvoy calls Cascade Sorbent in Bellingham to respond and clean up spilled fuel. To clean up small spills caused by customers, a 20-gallon and a 30-gallon spill kit, containing absorbent pads and socks and personal protective gear for employees, was recently acquired for the pier and the mini-mart, respectively. The Lummi Commercial Company, which manages the Fisherman's Cove area and the Shell gas station, will maintain this equipment to soak up small spills in the water (a skimmer or similar device would be needed for larger spills) or if there is a spill on the dock or surrounding area.

3.1.3 Lummi Shell Gas Station

The Lummi Shell gas station and mini-mart, built in 1996 at the corner of Slater Road and Haxton Way, sells vehicle fuels, including two grades of gasoline, diesel, and propane. To prevent spills, fuel lines have automatic shut-off valves and gasoline and diesel are stored in fiberglass underground tanks (holding 13,000 and 12,000 gallons, respectively) constructed with double walls, with approved leak detectors and monitors, and meeting all EPA regulations. This fuel system also passed a comprehensive inspection most recently in 2003 (Roberts 2004). Gas and diesel pumps are protected by steel poles. Propane is stored in an aboveground tank that is surrounded by concrete

blocks. None of these fuels are stored in an amount that requires a Risk Management Plan. Similar to Fisherman's Cove, gasoline and diesel fuel is supplied to the mini-mart by McEvoy Oil Company, which is responsible for cleaning up any spills from their trucks. In the event of a spill, McEvoy calls Cascade Sorbent in Bellingham to respond and clean up spilled fuel. To clean up small spills caused by customers, the mini-mart recently acquired a 30-gallon spill kit containing absorbent pads and socks and personal protective gear for employees.

3.1.4 Sandy Point Marina

In aerial photographs taken in March 2004, approximately 170 boats (mostly pleasure and a few commercial boats) were moored within the Sandy Point Marina, with approximately 130 additional empty mooring spaces available. Most of the boats in the marina are moored year-round. Some of the empty berths in March are likely filled during the summer months. Because these boats operate and are maintained in the water, they can cause water quality problems in the coastal waters of the Reservation. Since the marina is a protected water body, potential oil or fuel spills are less likely to be weather-related than at Fisherman's Cove, which is in open water. Spills at the Sandy Point Marina are more likely to be caused by accidents in the harbor or grounding of boats in the shallow entrance channel at lower tides.

The EPA has identified the following potential environmental impacts from boating and marinas: high toxicity in the water, increased pollutant concentrations in aquatic organisms and sediments, increased erosion rates, increased nutrients leading to an increase in algae and a decrease in oxygen (eutrophication), and high levels of pathogens. Water pollution from boating and marinas is linked to several sources including poorly flushed waterways, boat maintenance, discharge of sewage from boats, storm water runoff from marina parking lots, and the physical alteration of shorelines, wetlands, and aquatic habitat during the construction and operation of marinas. In addition, construction at marinas can lead to the physical destruction of sensitive ecosystems and bottom-dwelling communities (EPA 1996).

Significant amounts of solvents, paints, oils, and other pollutants can seep into ground water or be washed directly into surface water from activities that occur at marinas. Many boat cleaners contain chlorine, ammonia, and phosphates – substances that can harm plankton and fish. Small oil spills released from motors and refueling activities contain petroleum hydrocarbons that tend to attach to waterborne sediments. These persist in aquatic ecosystems and can harm organisms in the marine food chain (EPA 1996).

3.1.5 Roads

Roads are a potential source of spills when accidents involve tanker trailers or, to a lesser degree, vehicles with large fuel tanks. Slater Road, along the north boundary of the Reservation, is a main route to the industrial area located directly north of the Reservation and therefore represents one of the greatest road hazards in the area for spills of hazardous materials. The hazardous materials transported most frequently on Slater Road are fuels (e.g., gasoline, diesel, and propane), with chemicals such as ammonia, acids, and chlorine transported less frequently. Descriptions of individual off-Reservation facilities in the next section list hazardous materials that are transported to

and from the Cherry Point Heavy Impact Industrial Zone by road. Haxton Way is the main road traversing the Lummi Peninsula, including transportation to the Fisherman's Cove area and the Lummi Island ferry. The most likely larger spills on Haxton Way would be from fuel trucks serving the facilities and the Lummi Island Ferry at Gooseberry Point.

3.1.6 Construction Sites

Chemicals, lubricants, hydraulic fluid, and fuels that are used or stored at construction sites are potential sources of relatively small spills. While they would generally not represent an emergency situation, such spills do cause environmental harm and preventative measures (e.g., providing secondary containment, covering fuel stations) and spill response measures to ensure appropriate clean-up should be in place. The LNR has purchased four spill kits that are available for use at construction sites.

3.2 OFF-RESERVATION SOURCES

There are various potential off-Reservation sources of spills that represent a threat to the Reservation or to resources in the Lummi Usual and Accustomed hunting, fishing, and gathering grounds and stations. These spill sources include facilities, shipping routes, pipelines, railroads, and road transportation near the Reservation that could directly affect the Reservation and the Nooksack River and adjacent watersheds. The source of the largest potential damages is the Cherry Point Heavy Impact Industrial Zone and the associated transportation of hazardous materials to and from the facilities in this zone.

The Cherry Point Heavy Impact Industrial Zone is located immediately north of the Lummi Reservation. This heavy impact industrial zone, the largest such zone in Whatcom County, currently contains two petroleum refineries (ConocoPhillips and BP Cherry Point), an aluminum plant (Alcoa-Intalco Works), and two gas-fired co-generation plants (Tenaska and Puget Sound Energy). The construction of a third cogeneration plant by BP Cherry Point was approved by Governor Locke and the Energy Facility Site Evaluation Council (EFSEC) in 2004. One of the oil refineries (ConocoPhillips) and a gas-fired co-generation plant (Tenaska) are located directly north of the Reservation boundary and are located in Lummi Wellhead Protection Area 2 (LWRD 1997). All five facilities have property buffers to reduce hazards to the public. These five facilities contain most of the hazardous materials at fixed facilities in the Reservation area. In addition, the petroleum products and other hazardous materials that are transported to and from these facilities via ship, barge, pipeline, and truck probably represent a greater threat to the Reservation and tribal resources than the materials stored at the facilities.

The Washington Department of Ecology annually collects EPCRA Tier II information on facilities that store hazardous materials in Washington State. This Tier II information is entered in a database that is available from Ecology. The latest report available shows that in 2002, Whatcom County had 96 reporting facilities with a total of 516 chemicals (Ecology 2004). The County's Local Emergency Planning Committee (LEPC) ranked 9th in both the top ten list of LEPCs with the largest number of reporting facilities and the top ten list of LEPCs with the largest number of chemicals reported (Ecology 2004).

This section describes the primary off-Reservation sources of potential hazardous material spills that could impact the Reservation.

3.2.1 Industrial Facilities

The industrial facilities on or near the Reservation that present a potential inhalation hazard are listed in Table 3.1 and mapped in Figure 3.1. The hazard zones depicted in Figure 3.1 are derived from the “Table of Initial Isolation and Protective Action Distances” in the 2004 North American Emergency Response Guidebook (USDOT 2004). They are based on the “Large Spill, Night” downwind protective distances. A “large spill” is defined as a spill from a large package or multiple spills from many small packages (USDOT 2004). According to the North American Emergency Response Guidebook (NAERG), the protective zones suggest “distances useful to protect people from vapor resulting from spills involving dangerous goods which are considered toxic by inhalation (TIH). The Table provides first responders with initial guidance until technically qualified emergency response personnel are available. Distances show areas likely to be affected during the first 30 minutes after materials are spilled and could increase with time.” These hazard zone maps are designed as a tool for first responders and are not intended to suggest maximum potential vulnerability zones for any facility.

Table 3.1 Inhalation Hazard Zones for Facilities in the Reservation Area *

Location	Facility	Chemical	Isolation Zone (feet)	Protective Distance (miles)	Facility 24-hour Phone
Lummi Reservation	LTSWD Gooseberry Treatment Plant	Chlorine	800	4.6	360-815-6095
	LTSWD Sandy Point Treatment Plant	Chlorine	800	4.6	360-815-6095
Cherry Point Heavy Industrial Area or Ferndale Area	Tenaska Washington Cogeneration facility	Ammonia	200	1.4	360-380-2119
		Sulfuric acid	1000	4.0	
	ConocoPhillips Refinery	Hydrofluoric acid	700	2.7	360-384-8351
		Sulfuric acid	1000	4.0	
	ALCOA-Intalco Works Aluminum Plant	Chlorine	800	4.6	360-384-7301
		Sulfuric acid	1000	4.0	
	Praxair, Inc.	Ammonia	200	1.4	800-772-9247
	BP Cherry Point Refinery	Ammonia	200	1.4	360-371-1301
		Sulfuric acid	1000	4.0	
		Multiple	500**	1.0**	
	CHEMCO, Inc., wood plant	Multiple (diesel, formaldehyde)	160**	0.5**	360-354-4807
	Puget Sound Energy Whitehorn Generating Station	Sulfuric acid	1000	4.0	888-225-5773
	Ferndale Water and Wastewater Plant	Chlorine	800	4.6	360-384-4006 or 911
	Lynden Water and Wastewater Treatment Plant	Chlorine	800	4.6	360-354-3446
	Everson Wastewater Treatment Plant	Chlorine	800	4.6	360-966-0282

*(USDOT 2004).

** (Whatcom County 2001) These values are based on USDOT 1996.

Figure 3.1 Inhalation Hazard Zones for Facilities in the Reservation Area

These hazard zones for facilities are designed as a tool for first responders to be used in concert with the NAERG and are not intended to suggest maximum potential vulnerability zones for any facility. For facilities with multiple chemicals, the zone is for the substance with the largest protective distance (Whatcom County 2001).

Tenaska Washington Cogeneration Facility

The Tenaska Washington Cogeneration Facility (Tenaska) is located off of Lake Terrell Road, less than 0.5 miles north of the Reservation (see Figure 3.1), and began operating in 1994. It is a 270-megawatt cogeneration plant that provides power to Puget Sound Energy and steam to the ConocoPhillips refinery. It is powered by General Electric Frame 7EA gas turbines with supplementary-fired, heat-recovery steam generators and an extraction/condensing steam turbine system. In addition to the 50,000 cubic feet of natural gas used daily when the plant is operating, Tenaska also uses anhydrous ammonia and sulfuric acid in the generation process.

The Tenaska facility can store up to 6,000 gallons of sulfuric acid, which is used to purify water for steam generation, and up to 12,000 gallons (52,000 pounds) of anhydrous ammonia, which is used to clean nitrous oxide from emission vapors before release to the atmosphere (Ecology 2000a). Both substances are federally regulated, and as shown in Figure 3.1 if a large spill occurs, both could create an inhalation hazard as far as Lummi Bay and injure people on the Reservation (Whatcom County 2001). The Tenaska facility can also store up to 2.1 million gallons of diesel fuel oil and up to 6,000 gallons of caustic sodium hydroxide (Ecology 2000a). In 2002, Tenaska stored an average of between 10 and 50 million pounds of diesel as a back-up fuel and an average of between 10,000 and 100,000 pounds of sulfuric acid, ammonia, and sodium hydroxide (Ecology 2003b). All of these hazardous materials are transported to the facility via tanker trucks, most likely along Slater Road since the materials come from the south and Slater Road is the most direct access road from Interstate 5 (I-5). Tenaska has a Risk Management Plan, last revised in 1999, that is scheduled to be updated in 2004. The facility also has an SPCC spill response plan last updated in March 2003 and reviewed with no changes in 2004 (Alexander 2004).

All storage tanks on the Tenaska site are within concrete catch basins that have six inches of freeboard to provide 110 percent containment of potential accidental releases. To date, there have been no employee-caused accidents at the Tenaska facility (Alexander 2004). However, two spills of diesel fuel oil have occurred. On July 21, 1994, approximately 400 gallons of No. 2 diesel fuel was spilled when a gasket ruptured on a valve in a fuel transfer line at the fuel oil unloading skid. About half of the fuel sprayed inside the skid unloading catch basin, and the other half spilled onto the adjacent ground. After clean up and a period of monitoring, Ecology allowed Tenaska to discontinue monitoring on May 22, 2000. In November 1998, a pipe leak was discovered at the fuel loading station and the soil around the leak was excavated to repair the break. Test results of the remaining soils showed an acceptable level of risk and no further action was required (Ecology 2000a).

The Tenaska facility lies in a watershed that discharges to the Reservation, and some storm water from the facility drains to an unnamed stream that flows to Lummi Bay on the Reservation. Tenaska has taken steps to ensure that storm water runoff, which could pollute ground or surface water if untreated, is caught and treated before leaving

the facility. Water from asphalt surfaces is channeled to a holding pond with an under surface discharge. The water is tested for contamination before it is discharged to a grass channel that exits to the south. Wastewater and runoff from containment areas around storage tanks and equipment are processed first through one oil/water separator, then through the Tenaska wastewater treatment system, before discharge to the ConocoPhillips outfall in Georgia Strait. Runoff water is continuously composite-tested mechanically and samples are laboratory-tested monthly.

The fuel tank containment area at the Tenaska facility has an isolation drain valve that discharges to the storm water system. This area is not drained unless it is first checked for spilled material. The catch basins for the chemical storage tanks can be drained to the chemical waste collection and treatment sump if a spill occurs (Ecology 2000a). Although unlikely, a failure of these containment systems could result in damage to Reservation resources. A more likely potential threat is presented by transport of the hazardous materials along Slater Road to the Tenaska facility.

ConocoPhillips Ferndale Refinery

The ConocoPhillips Ferndale oil refinery was built in 1954 on the Strait of Georgia shoreline, directly north of Lummi Bay and half a mile from the Reservation (see Figure 3.1). The refinery was originally constructed by British Petroleum (BP) and has had numerous owners, including Mobil, Tesoro, and Tosco. Crude oil is transported to the refinery by tanker ships via a deepwater dock and pumped through pipelines from the dock up to the refinery, and by pipeline via the Terasen (formerly Trans Mountain) pipeline. Most, if not all, of the oil is currently received by ship from Alaska rather than by pipeline from Canada. Other hazardous materials are received by ship, rail, and truck (Whittaker 2004). The refinery produces gasoline, jet fuel, low and ultra-low sulfur diesel, home-heating oil, propane, butane, and several specialty products. It can process about four million gallons (95,000 barrels) of crude oil per day and produce about two million gallons (48,000 barrels) of gasoline per day (ConocoPhillips 2004).

ConocoPhillips primarily uses the BP Olympic pipeline to transport its fuel products, with about 85 percent of the total product shipped by pipeline, 12 percent by ship or barge, and three to four percent by truck. During the 18 months that the pipeline was closed after the spill of 237,000 gallons of gasoline into Whatcom Creek in 1999, the refinery shipped most of its products from its own dock. In an average month, 10 tankers and 50 barges are handled by dock crews at the refinery. In addition, some chemicals and products are transported to and from the refinery by rail or by truck via Slater Road and Interstate-5. Railcars are transferred at the refinery gate and all movement of railcars at the refinery is conducted by refinery staff (Paris 2004; Whittaker 2004). Potential spills from the ConocoPhillips refinery and its associated ship and truck traffic present a significant environmental threat to the marine waters, shoreline, and uplands of the Reservation as well as to surrounding areas that are important resources for the Lummi people.

In their refining process, ConocoPhillips uses sodium hypochlorite, hydrofluoric acid, sulfuric acid, and other caustic agents. The refinery stores an average of over 10,000 pounds of sodium hypochlorite and sulfuric acid and over 100,000 pounds of hydrofluoric acid (Ecology 2003b). The two acids are transported by truck to ConocoPhillips approximately every one to three months (Whittaker 2004). Both acids are federally

regulated and, if spilled, could contaminate the air and injure people on the Reservation in a large spill scenario (Figure 3.1). The refinery also stores an average of over 10,000,000 pounds each of crude oil, diesel, gasoline, various naphtha products, and residual fuel oil (Ecology 2003b). Although the storage tanks at the refinery have asphalt-lined earthen dikes (the sulfuric acid tank has concrete containment) with 110 percent of tank capacity as secondary containment features, these substances could potentially contaminate surface and ground water on the Reservation.

In 2003, the ConocoPhillips refinery submitted an updated spill response/emergency plan to the EPA. This plan followed the Integrated Contingency Plan, or "One Plan," format that is designed to meet all regulatory requirements with one document. Spill prevention measures include specified and regulated oil transfer procedures, catch basins for pipeline junctions/manifolds, on-site booms and other spill response equipment, and quarterly response deployment drills. The refinery has incident response teams on staff, with roughly 50 staff having the 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) Training required by 29 CFR 1910 (Whittaker 2004).

The wastewater outfall from the refinery extends 2,100 feet west from the shore into the Strait of Georgia. The 1.4 million gallons per day of wastewater from the refinery goes through an oil/water separator and receives primary and secondary treatment before discharge. The refinery is located within two watersheds that drain to the Reservation, and some storm water from the facility discharges to an unnamed stream that flows to Lummi Bay on the Reservation.

ALCOA-Intalco Works Aluminum Plant

The ALCOA-Intalco Works (Intalco) aluminum smelter was built in 1965 along the Strait of Georgia, about 1.5 miles north of the Reservation boundary (see Figure 3.1). The Intalco smelter began operations in 1966. The facility produces primary aluminum metal by the Hall-Heroult reduction process. When in full operation, the smelter is capable of producing 307,000 tons of aluminum per year. Intalco operated continuously until the electrical shortages along the West Coast in 2001 forced the suspension of production from May 18, 2001 to April 30, 2002. The plant was in partial operation for a period before the suspension of production and has operated at less than capacity since resuming production. Current production is limited to about one-third of capacity, and future production is uncertain because of proposed rate increases for electricity.

The smelter receives alumina ore by ship at the Intalco dock along the Strait of Georgia. The ore could pose a dust and silt danger if it escaped during transport, although the compound itself is an inert material. The finished ingots of different shape and combination of metals are transported by truck and ship. Hazardous bi-products are shipped to Oregon for disposal, although Intalco maintains a federally approved RCRA hazardous waste site that contains smelter pot lining, with cyanide and other compounds in the lining. Currently, only wastewater sludge is placed in the waste site (Ringwald 2004). In addition, Intalco has three historic unlined landfills that were used for waste disposal from the 1960s until 1984. Two of these landfills (Beach 1 and Beach 2) occupy ravines that open onto the Strait of Georgia shoreline and the third is located on the bluff above the shoreline. Water seeping from the hillsides below these landfills contains elevated levels of fluoride, cyanide, polychlorinated biphenyls (PCBs), and total

suspended solids. Polycyclic aromatic hydrocarbons (PAHs) have also been found in soil samples taken from the Beach 1 and 2 landfills. Intalco is implementing a monitoring plan for the landfills, has developed a plan to clean up the contamination, and has applied to Whatcom County Planning and Development Services to perform engineered land clearing and grading in 2005 to mitigate the impacts of the landfills (Ecology 2001a; Ringwald 2004). Intalco uses a large amount of aluminum fluoride in the smelting process. While not a hazardous material, aluminum fluoride is the source of hydrofluoric acid released as an air pollutant (at nonhazardous concentrations) and of fluorides that are discharged from the process and storm water outfalls (Ringwald 2004).

Intalco uses several hazardous chemicals in their process, including chlorine and sulfuric acid, that pose potential threats to the environment and the surrounding community if released in sufficient quantity. Since the implementation of the Emergency Planning and Community Right-to-Know Act (EPCRA), Intalco has reduced the storage capacity of all regulated substances. For example, chlorine had been stored in a 2,000-gallon tank, but is now used only in 150-pound cylinders. However, both chlorine and sulfuric acid could create an inhalation hazard and injure people on the Reservation if a large spill occurs (Figure 3.1). In 2002, Intalco stored an average of over 1,000 pounds of chlorine; over 10,000 pounds of sulfuric acid, diesel, and gasoline (delivered by tank truck); over 100,000 pounds of sodium hydroxide (primarily delivered by rail); and over one million pounds of insulating oil (Ecology 2003b). Since 2002, Intalco has switched to ultraviolet treatment of its wastewater and has further reduced chlorine storage to below 1,000 pounds (Ringwald 2004). Intalco also stores significant quantities of coke ash and cold tar pitch, which are used to control the production process. These hazardous materials, some of which are trucked to and from the plant via Slater Road, are a potential hazard on the Reservation and could affect marine resources if a spill reached tidelands.

Gasoline, diesel, and hydraulic fluid are stored in above-ground tanks for use by vehicles and machinery on site. For all chemicals and fuels, Intalco has secondary containment in the form of either double-walled tanks or concrete basins/control dams around the tanks. Concrete containment is 110 percent of tank capacity. Intalco completed a major update of its Release Prevention, Control, and Countermeasure (RPCC) plan in August 2003 in compliance with the CWA. The RPCC includes procedures for all hazardous sources at the plant and addresses all potential releases. A Spill Prevention Control and Countermeasure (SPCC) plan that addresses liquid materials is a part of the RPCC. Intalco is permitted to discharge treated wastewater into the Strait of Georgia (under NPDES water permit WA0000295-0) and has been issued a renewed air-operating permit that is effective May 1, 2004 (Ringwald 2004).

Praxair, Inc.

The Praxair plant, located on Aldergrove Road, just east of the BP Cherry Point refinery (see Figure 3.1), produces carbon dioxide for distribution to various commercial destinations. In 2002, this facility stored an average of between 10,000 and 100,000 pounds of ammonia, which is toxic and flammable (Ecology 2003b). The ammonia, which is used as a refrigerant, is stored in multiple steel tanks that are inspected but do not have secondary containment. However, the nature of ammonia (its boiling point is minus 29 degrees F) and other safety features of the facility make it unlikely that spilled liquid ammonia would escape the facility and reach marine waters before it evaporates. Ammonia is delivered to Praxair by tank trucks, most likely via Grandview Road from

Interstate 5. Praxair has developed an Emergency Response Plan for the facility, which includes spill response procedures, evacuation routes, and emergency notification for the community (Laplante 2004). The inhalation hazard zone for the Praxair facility (Figure 3.1) is approximately four miles from the Reservation boundary and, since winds from the northwest are very uncommon, the facility is not a probable threat to the Reservation. A worst-case spill could potentially, but is unlikely to, affect off-Reservation tidelands and marine waters that are important to tribal fisheries.

BP Cherry Point Refinery

The British Petroleum Corporation Cherry Point (BP, formerly ARCO) refinery was built in 1971 along the Strait of Georgia, six miles northwest of the Lummi Reservation (see Figure 3.1). The BP refinery processes Alaskan North Slope crude oil, which is transported to the deepwater BP dock by tanker. The refinery formerly received (and could again receive) crude oil from Canada through a BP pipeline that connects to the Terasen pipeline (Rust 2004). About 8.4 million gallons (200,000 barrels) of crude oil is processed per day to produce a variety of products, including gasoline, jet fuel, diesel, and other residual fuels. Approximately 75 percent of these refined products are transported through the BP Olympic pipeline to terminals along the West Coast. The remaining products, including butane, sulfur, and coke, and other materials are exported or received by tanker, barge, rail, or truck, via Grandview Road and Interstate-5. A BP pipeline carries butanes to the BP Ferndale Terminal (formerly the Texaco Producing Terminal), which is south of the Alcoa-Intalco aluminum plant, from which they are transported by ship or barge (ARCO 2000). The BP Ferndale Terminal also receives and ships liquid propane by rail and truck. The BP refinery, BP pipelines, and associated ship, rail, and truck traffic pose a significant environmental threat to the Reservation and the marine waters and coastline between Point Roberts, Birch Point, Eliza Island, and Orcas Island, which the Lummi Nation depends on for its subsistence, ceremonial, and commercial fishing needs.

In their refining process, BP uses sodium hypochlorite, sulfuric acid, anhydrous ammonia, and other caustic agents. Ammonia and sulfuric acid, the most hazardous of these chemicals, are transported by truck to the refinery. The BP refinery can store up to 40,000 pounds of anhydrous ammonia and 6,000,000 pounds of butane. In 2002, the refinery stored an average of over 10,000 pounds of ammonia, sodium hypochlorite, and other chemicals, and over 100,000 pounds of sulfuric acid (Ecology 2003b). The ammonia storage tank is elevated over an asphalt-covered area that drains to a waste tank, which can hold all potentially spilled ammonia. The sulfuric acid storage tank is on a concrete pad, with concrete containment walls that provide the capacity of the tank plus the volume of a 100-year rainfall (at least 110 percent tank capacity). This containment area can also be drained to a waste tank (Seltzer 2004). A large spill scenario for these substances does not indicate an acute inhalation hazard to the Lummi Reservation (Figure 3.1). However, a large spill under certain wind conditions could contaminate the air on the Reservation.

The BP refinery also stores an average of over 10,000,000 pounds each of diesel, various naphtha products, and residual fuel oil and over 100,000,000 pounds of crude oil and gasoline (Ecology 2003b). The refinery has a maximum oil storage capacity of 315,651,540 gallons (7,198,912 barrels of crude oil and refined products), with the largest of 52 aboveground tanks holding 21,000,000 gallons (about 149 million pounds).

The petroleum storage tanks are surrounded by large earthen dikes, with the entire containment area lined by asphalt designed to retain petroleum products. These containment areas also provide the capacity of the tank plus the volume of a 100-year rainfall (Seltzer 2004). There are several incident response teams on the refinery staff, with at least 170 employees and contract employees that have the 40-hour HAZWOPER training required by 29 CFR 1910 (ARCO 2000). A spill response plan for the refinery was most recently revised in March 2003 to update names and other minor details, but the basic elements of the plan have been in place for several years (Rust 2004).

CHEMCO, Inc.

CHEMCO chemically impregnates wood products under pressure with a proprietary treatment to provide fire-retardant protection. On its 40-acre site at the intersection of Grandview and Kickerville roads (just east of the BP Cherry Point refinery; see Figure 3.1), CHEMCO has a chemical manufacturing plant and stores multiple chemicals, including between 10,000 and 100,000 pounds of diesel fuel and formaldehyde, a toxic preservative (Ecology 2003b). The inhalation hazard zone for the CHEMCO facility is approximately three miles from the Reservation boundary and is therefore not a significant threat to the Reservation. CHEMCO is located in the Terrell Creek watershed, which drains to the Strait of Georgia. A worst-case spill could potentially affect off-Reservation tidelands that are important to tribal fisheries.

Puget Sound Energy Whitehorn Generating Station

The Puget Sound Energy (PSE) Whitehorn Generating Station is located on Brown Road, just west of the BP Cherry Point refinery, and above Point Whitehorn along the Strait of Georgia. The Whitehorn Generating Station became operational in January 1975 and has been expanded since that time. This facility currently consists of two combustion turbine generators, three distillate fuel storage tanks, a water treatment system, and an electric substation. Two fuel storage tanks hold 1,008,000 gallons and a third holds 4,200,000 gallons. The distillate fuel oil in these tanks is the alternate fuel for the combustion turbine generators. The primary fuel for the turbines is natural gas supplied through the Williams pipeline by Northwest Pipeline Company (NWAPA 2003).

The turbine generators have no set operating schedule and operate only when additional electrical power capacity is needed. The turbines may go months or years without any significant operation except for testing, but may operate continuously for weeks when the power situation warrants. The turbine with the most use has operated for 17,000 hours since installation in 1980, with 6,000 of those hours occurring during the 2000-2001 period. During 2002, the generating station operated at very low capacity (only about one percent) because of low demand for power (NWAPA 2003; Lind 2004).

In addition to fuel storage, the Whitehorn Generating Station can store up to 3,500 gallons of sodium hydroxide (caustic) and 1,000 gallons of sulfuric acid. These compounds are transported to the station by tanker truck and are used to treat ion exchange resins in the water treatment system. The storage tanks for the sodium hydroxide and sulfuric acid are inside a building, with concrete containment and drains to a sump system (Lind 2004). In 2002, the generating station stored a daily average of between 1,000 and 10,000 pounds of sulfuric acid and between 10 million and 50 million pounds of diesel fuel (Ecology 2003b). The generating station currently stores

approximately three million gallons of No. 2 diesel fuel, which is generally transported to the station via a pipeline from the BP refinery (tanker truck is a secondary option). The aboveground fuel storage tanks have approximately 150 percent containment by earthen berms with clay (not concrete or asphalt) linings. All storage tanks at the facility have a monitoring and alarm system that is connected to a main PSE office in Redmond, WA. The generating station has a SPCC spill response plan that was recently updated during the 2002 – 2003 period (Lind 2004).

The sulfuric acid at the station has an inhalation hazard range of up to 4.0 miles based on the “large spill, night” classification of the 2004 NAERG, but this hazard zone does not reach the Reservation. Although unlikely, given the volume and distance from the Reservation, a large spill of acid could potentially contaminate air on the Reservation and could affect off-Reservation tidelands and marine waters that are important to tribal fisheries. The large volume of diesel fuel stored at this facility presents a greater potential threat to the environment.

Other nearby facilities:

The BP Ferndale Terminal (formerly the Texaco Producing Terminal) is along the Strait of Georgia, just north of the ConocoPhillips refinery and south of the Alcoa-Intalco Works aluminum plant. A BP pipeline carries butanes from the BP refinery to the BP Ferndale Terminal, from which they are transported by ship or barge (ARCO 2000). The BP Ferndale Terminal also receives and ships butane and liquid propane by rail and truck.

Facilities that store hazardous chemicals in the City of Bellingham area include Bellingham Cold Storage (ammonia), Bornstein Seafoods Inc. (ammonia), Encogen Northwest Cogeneration Plant (ammonia, sulfuric acid), Georgia-Pacific West Inc. (ammonia, acids), the Post Point Wastewater Treatment Plant (chlorine), and the Bellingham water treatment plant (chlorine). Additional details for these and other facilities located in Whatcom County are listed in the annual summary of the Washington Tier Two Hazardous Chemical Inventory.

3.2.2 Municipal Facilities

The municipal water and wastewater plants listed below all discharge their effluent to the Nooksack River. Sewage spills from these plants can harm the Nooksack River and contaminate tribal shellfish beds on the Reservation, especially in the Portage Bay area. Each facility is in the Nooksack River floodplain and close to the river, and each stores enough chlorine to present a potential inhalation hazard to its surrounding area (Figure 3.1).

Ferndale Water and Wastewater Treatment Plant: The City of Ferndale operates a water and wastewater treatment facility just over a mile from the northern boundary of the Reservation, with an outfall to the Nooksack River that is approximately three miles upstream from where the river enters the Reservation. This facility stores a total of approximately twelve 150-pound chlorine cylinders that are divided between two buildings. The facility also has a 2,000-gallon tank for storage of diesel fuel; this tank has appropriate spill containment features (Leuenberger 2004).

Lynden Water and Wastewater Treatment Plant: The City of Lynden operates a water and wastewater treatment facility with an outfall to the Nooksack River that is approximately 11 river miles upstream from the northern boundary of the Reservation. The water plant has a 2,000-pound chlorine cylinder and two 150-pound back-up cylinders to treat water. Wastewater, formerly treated with chlorine, is now treated with ultraviolet (UV) light before discharge. The facility stores sodium metabisulfite to remove chlorine from the wastewater in case the UV system is not operating. The facility also has an approximately 100-gallon diesel tank and a back-up diesel generator with a tank of perhaps 400 gallons (Adams 2004).

Everson Wastewater Treatment Plant: The City of Everson operates a wastewater treatment facility with an outfall to the Nooksack River that is approximately 20 river miles upstream from the northern boundary of the Reservation. This wastewater facility stores a total of approximately four to six, 150-pound chlorine cylinders in one building. The facility also stores sodium metabisulfite to remove chlorine from the wastewater and has a diesel generator (Shaw 2004).

3.2.3 Transportation of Hazardous Materials

A spill resulting from an accident in the transportation network of marine shipping and upland pipelines, roads, and railways may pose the greatest hazardous materials risk in the area. This risk is due to the probability of accidents associated with moving containers of hazardous materials and to the length of pipelines and the large volumes of products that flow through pipelines. Longer response times than those for fixed facilities also contribute to the increased risks associated with the transportation of hazardous materials.

In the Reservation vicinity, large oil tankers serve the two oil refineries and could create a spill on the scale of the Exxon Valdez spill in Prince William Sound. Three pipelines carrying oil, gasoline, jet fuel, and natural gas cross the Nooksack River and run parallel to Slater Road, less than one mile from the Reservation boundary. Hazardous materials may be transported along many roads in the area. Slater Road is one of the main routes to the Cherry Point Heavy Impact Industrial Zone and it is used to transport various hazardous materials between the facilities and the Interstate 5 highway. The main railway through the area passes 1.5 miles from the east boundary of the Reservation and crosses the Nooksack River in Ferndale, approximately two miles north of the Reservation. A secondary rail line serves the facilities in the Cherry Point Industrial Zone. Figures 3.2, 3.3, and 3.4 show the pipeline, main road, and railroad routes in the area and highlight the potentially vulnerable zones along the road and railroad routes.

Shipping

Large barges and oil tankers load and unload oil and petroleum products at the ConocoPhillips and BP docks in the Strait of Georgia just north of the Reservation. The locations of these docks are shown in Figure 3.1. Large vessels also visit the Intalco dock, which lies between the two refinery docks. Potential spills can occur as a result of vessel groundings, collisions, allisions, or during the transfer of products at the dock. A large oil spill in this area could have huge environmental and economic effects on the region because it could severely damage marine resources and shut down all shipping

Figure 3.2 Pipelines in the Reservation Area

Figure 3.3 Hazardous Materials Corridors for Major Roads in the Reservation Area

Figure 3.4 Hazardous Materials Corridors for Railroads in the Reservation Area

for an extended period, including the delivery of oil from other tankers that the region relies on for much of its fuel needs.

Recent significant shipping accidents in the Reservation area include:

- On December 14, 2001, the T/V Overseas Washington was discharging cargo at the south wing of the Cherry Point refinery dock when a combination of wind and wave action parted the two after-spring lines, damaging three loading arms. The vessel crew and the terminal operator recognized the deterioration of the weather and had drained the loading arms, so no significant amount of oil was spilled (Ecology 2003c).
- On June 13, 2001, the Overseas Boston was unloading Alaska North Slope crude oil at the Tosco (now ConocoPhillips) dock when a coupling that connected a marine loading arm to the ship's manifold blew off. Oil, discharged from the ship's manifold, blew across the Tosco dock and was deflected back to the ship by a shroud located at the rear of the marine loading arms. The ship's operator immediately stopped transfer but 2,620 gallons (62.4 barrels) of oil were released with approximately 2,436 gallons (58 barrels) spilled to the water. The refinery response team was activated, the agencies were notified and clean-up contractors were called in. No wildlife was injured by the spill and no lasting environmental damage was incurred (Whittaker 2004).
- On June 27, 1999, the T/V Arco Texas was discharging crude oil through two loading arms to the Tosco (now ConocoPhillips) refinery when a combination of tidal current and wind overcame the holding capacity of its winches and the ship drifted away from the terminal dock, causing both loading arms to fall into the water. Approximately 1,050 gallons (25 barrels) of crude oil were released as a result of the damaged loading arms. The probable cause of the breakaway and subsequent spill was the inadequate capacity of the aft mooring winches on the ship under the current and wind load at the time. The observed flood current of between one and three knots was not reflected in the tidal current predictions for the nearest prediction points, which indicated a slack current turning to a weak flood at the time of the incident (Ecology 2001b).
- On August 6, 1997, a failure or human error involving the pumping system at the Tosco (now ConocoPhillips) dock caused a spill of about 1,050 gallons (25 barrels) of a mixture of heavy oil and jet fuel into the Strait of Georgia. The spill occurred as Tosco used bunker oil to clear test water from a pipeline on its dock. A significant spill response effort was made, including skimmers, absorbent materials, and placing booms along the shorelines of the Sandy Point Peninsula and the north end of Lummi Island. Workers were prepared to lay a 10,000-foot boom across Lummi Bay, but the oil did not approach the bay. Minor shoreline effects of the spill were recorded on Vendovi Island, south of Lummi Island.
- On December 30, 1994, an estimated 26,936 gallons (641 barrels) of diesel oil spilled when Barge 101 grounded while being towed by the tug Mercury to Jack Island (near Anacortes) from Vancouver, British Columbia. The grounding most likely occurred on Clements Reef, just northwest of Matia Island and approximately eight miles west of the Reservation. At the time of the grounding, Barge 101 was

carrying 2,620,968 gallons (62,404 barrels) of No. 2 diesel oil, and had a draft of 16-feet 5 inches forward and 19-feet 5 inches aft. Damage to the barge was not detected until the tug Mercury tied up to the barge, at which time the crew observed diesel oil in the water around the barge. The grounding punctured the number four and six starboard cargo tanks. A spill response effort by Crowley Marine Services followed. The Office of Marine Safety determined that the probable cause of the grounding was the Master's failure to accurately navigate the tug Mercury and the barge near charted navigational hazards. This occurred as a result of a failure to follow the established navigation procedures of the company and to use the instruments available on-board to determine the position of the vessel (Ecology 2000b).

- On May 1, 1987, about 1,000 gallons (24 barrels) of heavy fuel oil spilled from an overfilled barge tank at the Mobil Oil Company (then Tosco, now ConocoPhillips) dock (Bellingham Herald 1997).
- On June 4, 1972, approximately 21,000 gallons (500 barrels) of crude oil were spilled into the Strait of Georgia at the ARCO (now BP) Cherry Point Refinery dock from the T/V World Bond. The tanker ship was in the process of offloading Alaska North Slope crude oil when a flange on the tanker failed. A significant response effort was implemented to contain and recover the oil and clean the shoreline, but few details were recorded. Following this incident, ARCO implemented new policies stipulating that all vessels calling on the dock must be in good condition, including the piping, manifolds, flanges, and other oil transfer equipment. These policies also required that all new vessels be inspected before docking at the Cherry Point Refinery and that any vessel not meeting the established criteria will be prohibited from docking or transferring oil (ARCO 2000).

The BP Cherry Point refinery also reported jet fuel spills of 210 gallons in 1991 and 100 gallons in 1997 from vessels at their dock. Eight other spills of various petroleum products ranging from 10 to 100 gallons and 24 smaller petroleum spills (many of which were less than one gallon, or were sheens) were recorded from 1990 through 1999 at the BP dock. From the start of operation in 1971 through 1989, there were nine petroleum or oily water spills of 80 to 420 gallons and twelve spills of less than ten gallons (three of which were sheens) at the Cherry Point dock (ARCO 2000). The ConocoPhillips refinery has also had minor spills at its dock (Whittaker 2004). From 1995 to 2004 there were 6 spills of crude oil, jet fuel, gasoline, or heavy fuel oil that ranged in size from a sheen to 126 gallons (3 barrels) (Whittaker 2004). A small spill (2-3 barrels) of diesel fuel occurred at the dock on January 18, 2005 and 50 gallons (less than 1.5 barrels) of intermediate fuel oil was spilled from a barge on February 14, 2005.

Because human error is responsible for many spills, the safety planning and training of ship crews and dock personnel are important factors in preventing spills. When a spill occurs, the ConocoPhillips and BP refineries have response plans that are practiced at least three times annually with two required deployment exercises and one required tabletop exercise. In addition, the Northern Puget Sound Geographic Response Plan (GRP) for oil spills guides the actions of all available response entities to protect environmental resources.

Pipelines

As detailed in Table 3.2 and illustrated on Figure 3.2, there are eight pipelines that transport petrochemicals in northwestern Whatcom County near the Reservation, six of which service the facilities in the Cherry Point Heavy Impact Industrial Area. Three of these, the BP Olympic pipeline carrying refined fuel, the Terasen crude oil pipeline, and the Cascade natural gas pipeline, run east-to-west just north of the Reservation boundary. All three pipelines cross the Nooksack River just east of the northeast boundary of the Reservation.

Two natural gas pipelines, the Cascade pipeline and the BP pipeline, originate (or cross) the Canadian border near Sumas, travel west across Whatcom County and enter the industrial zone from the north. These natural gas pipelines cross several creeks that are tributaries to the Nooksack River. A third natural gas pipeline, the Williams Northwest Pipeline, crosses the United States border at Sumas and travels south to east of Bellingham making two crossings of the Nooksack River. A fourth natural gas pipeline is the Sumas pipeline which connects the Sumas Cogeneration plant to the Canadian pipeline facilities of Westcoast Energy Inc. (DOE 1992).

There are two pipelines which run within the industrial area. The BP pipeline transfers crude oil from the Terasen pipeline to the BP Cherry Point refinery. This line is not currently in use but could become the primary route if oil tanker shipping is shut down. Finally, BP operates a butane pipeline that runs from the refinery to the BP Ferndale Terminal to the north of the ConocoPhillips refinery.

The greatest public safety and environmental risk to the Reservation is posed by the BP Olympic pipeline (formerly the Olympic Pipeline Co.), which was the source of the large gasoline spill and explosion in 1999 in the City of Bellingham that killed three people and caused significant environmental damage along Whatcom Creek. The BP Olympic pipeline runs almost parallel to the northern Reservation boundary, ranging from approximately one-eighth to one-half mile to the north, and crosses the Nooksack River just north of Slater Road. The two crude oil pipelines, Terasen and BP, also pose a risk because they are close the Reservation, the Terasen lines crosses the Nooksack River, and the product they carry could cause significant environmental damage, especially to aquatic habitats. The natural gas lines pose less risk because natural gas is lighter than air, dissipates quickly, and does not pose a large inhalation or environmental hazard.

Recent significant pipeline accidents in the Reservation area include:

- In January of 2000, the Trans Mountain (now Terasen) pipeline spilled 21,000 gallons (500 barrels) of crude oil at the Laurel station facility when a valve was left open during a restart. Including this spill, the Terasen pipeline has had three spills of light crude at the Laurel station totaling 28,800 gallons from the 10-year period between 1993 and 2003 (Chin 2003).
- On June 10, 1999, a 16-inch-diameter steel pipeline owned by Olympic Pipe Line Company (now BP Olympic) ruptured and released about 237,000 gallons of gasoline into Whatcom Creek in Bellingham, Washington. About 1 1/2 hours after the rupture, the gasoline ignited and burned approximately 1 1/2 miles along the creek. Two 10-year-old boys and an 18-year-old were killed and eight additional

Table 3.2 Petrochemical Pipelines near the Lummi Reservation

Pipeline	Product	Route	Risk to Reservation
BP Olympic	Refined fuels	<ul style="list-style-type: none"> Runs north-south to connect the BP and ConocoPhillips refineries, then runs east-west just north of the Reservation Crosses the Nooksack River just east of the northeast corner of the Reservation 	High
Terasen	Crude oil	<ul style="list-style-type: none"> Runs east-west from Cherry Point to the I-5 corridor (approximately) then north-south. Crosses the Nooksack River approximately 1 mile north of the northern boundary of the reservation. 	High
Cascade	Natural gas	<ul style="list-style-type: none"> Runs east-west from Cherry Point to the I-5 corridor (approximately). Crosses the Nooksack River just east of the northeast corner of the Reservation Includes a segment that runs between BP and ConocoPhillips 	Medium-High
Williams	Natural gas	<ul style="list-style-type: none"> Begins or crosses the Canadian border near Sumas and runs directly south to the east of Bellingham with a branch into Bellingham. Crosses the Nooksack River twice. 	Low
BP Natural Gas	Natural gas	<ul style="list-style-type: none"> Begins or crosses Canadian border near Sumas, travels west across northern Whatcom County, and then southwest to the industrial zone. 	Low
Sumas Pipeline	Natural gas	<ul style="list-style-type: none"> Runs east-west between the Canadian border near Sumas and the Sumas Cogeneration plant. 	Low
BP Cherry Point	Crude oil	<ul style="list-style-type: none"> Connects the Terasen crude oil pipeline to the BP Cherry Point refinery. Runs north-south within the Cherry Point Heavy Impact Industrial area 	High (when in use)
BP Cherry Point	Butane	<ul style="list-style-type: none"> Runs from BP Cherry Point refinery to the BP Ferndale Terminal 	Medium

injuries were documented. A single-family residence and the City of Bellingham water treatment plant were severely damaged. In addition, substantial environmental damage occurred along the creek and its banks. As of January 2002, Olympic estimated that total property damages were at least \$45 million.

- On March 1-2, 1997, a leak from the ARCO (BP) pipeline spilled 420 gallons of crude oil on ALCOA-Intalco farmland (Bellingham Herald 1997).
- On January 1, 1997, a weather-related pipe break spilled 31,500 gallons of oil onto the Tosco (now ConocoPhillips) refinery grounds (Bellingham Herald 1997).
- In 1997, the Williams Northwest natural gas pipeline ruptured in Whatcom County sending shooting flames into the air just north of Nugent's Corner, east of Goodwin Road near Everson, WA. The cause of the rupture was thought to be an area of shifting ground. Structural damage was caused to homes in the area but no one was injured (AP 2003).
- In 1992 the Trans Mountain (now Terasen) pipeline was fined for a 92,000 gallon spill that reached a nearby wetland (Chin 2003)
- On February 23, 1987, about 16,800 gallons of diesel fuel spilled from a pipeline on the Mobil Oil Company (then Tosco, now ConocoPhillips) property (Bellingham Herald 1997).

Roadways

Accidents along roadways present a significant spill potential on and near the Reservation. The largest hazards for the Reservation are posed by trucks and trailers delivering hazardous materials to the Cherry Point Heavy Impact Industrial Zone and fuel to the Lummi Shell station, the Fisherman's Cove gas station, and the Whatcom County ferry to Lummi Island. The route for all of these destinations follows Slater Road, a county road that lies along the northern boundary of the Reservation. The trucks also travel along Haxton Way to reach the gas stations on the Reservation and the Lummi Island ferry.

Other roadways of concern to the Lummi Nation include the many roads that cross the Nooksack River or its tributaries. The highways that cross the Nooksack River are most likely to have an accident that causes a spill. These highways are Interstate 5 and State Highways 539, 542, and 544. Hazard zones along the major roads in the area were identified to be one mile wide on either side of the roadways by Whatcom County (Whatcom County 2001) and are shown in Figure 3.3.

Railroads

The Burlington Northern railway passes 1.5 miles from the east boundary of the Reservation and crosses the Nooksack River in Ferndale, approximately two miles north of the Reservation. Since this rail line carries materials between Seattle, Washington, and Vancouver, British Columbia, it may carry hazardous materials on a daily basis. A

secondary rail line travels north from the facilities in the Cherry Point Heavy Impact Industrial Zone to the main rail line. Figure 3.4 shows the railroad routes in the area and the potentially vulnerable zones in a large spill scenario along these routes (Whatcom County 2001). The two-mile wide vulnerable zone identified by Whatcom County reaches onto the eastern portion of the Reservation, indicating the potential for an event involving a chemical with a large inhalation hazard that could be released into winds from the east moving onto the Reservation.

4. LUMMI SPILL PREVENTION AND RESPONSE

Although the Lummi Natural Resources Department (LNR) has previously developed Spill Response Plans for marine waters and for upland areas, these plans have not been integrated. This SPRP builds on the past plans to develop a more comprehensive and integrated plan for spill response.

The LNR 1996 Oil Spill Response Plan was a short document comprised of a phone list of LNR employees to be contacted in case of a spill; a phone list of pertinent federal and state agencies, tribal and local governments, and non-governmental organizations; a letter to Whatcom County Division of Emergency Management (DEM) requesting notification of incidents and providing coordination details; guidance on initial response actions for tribal staff that are on-site or notified of a spill incident; and a list of LNR staff designated to be the Tribal On-Scene Coordinator (Tribal OSC). (The Tribal OSC is the Lummi representative on a federal/tribal/state/local Unified Command structure that is responsible for organizing the spill response. The federal OSC generally has the greatest authority.) The LNR Spill Response Plan was updated in 1998 with new contact information, revised initial response guidance, and an environmental complaint form used to record information describing spills.

The Lummi Nation Wellhead Protection Program Phase II report (LWRD 1998a) contains a section titled Spill Response Plan that addresses the threats to water quality in the two wellhead protection areas on the Reservation. This plan briefly describes the nature of hazardous materials incidents and possible steps to reduce the effects of such incidents. It also identifies the primary legislative requirements pertaining to spill response, the primary potential sources of hazardous materials on and near the Reservation, the responsibilities or capabilities of off-Reservation organizations (i.e., government agencies and industries) that may respond to a spill that affects the Reservation or tribal resources, and contact information for those organizations and for LNR staff. In addition, the plan describes the response capabilities and limitations of Lummi Law and Order and LNR personnel and the order of notification for response organizations.

In addition, the Lummi Natural Resources Department (LNR) provided the Whatcom County DEM with emergency notification procedures in 1997, 2000, 2003, and 2004 (Appendix F). These procedures request that DEM notify LNR as soon as possible of any environmental emergencies that affect Reservation residents or tribal resources. The procedures include a prioritized list of LNR staff with contact information for the staff and for other important emergency contacts. These notification procedures are also attached to the emergency procedure sheet used by the Lummi Tribal Sewer and Water District (LTSWD) for sewage spills (Appendix F). This sheet includes immediate actions to be taken and instructions for required notification of the EPA, LNR, and the Washington Department of Health for discharges that may affect shellfish growing waters.

4.1 RESPONSIBILITY AND AUTHORITY

Pursuant to the Lummi Nation Constitution, complete leadership authority and responsibility rests with the Lummi Indian Business Council (LIBC). As a result, the

LIBC and its officers are responsible for the health and safety of the Lummi Reservation community and for emergency direction and control within the boundaries of the Lummi Indian Reservation. The LIBC consists of eleven elected members, who serve three-year terms. The terms of the council members are offset so that four members are up for election in consecutive years followed by three members standing for election. Once an annual election is completed and the members are seated, they elect officers among themselves. The Chairman, Vice-Chairman, Treasurer, and Secretary each have constitutionally required responsibilities and authority and each is assigned specific and general responsibilities by the LIBC.

Although it retains the political responsibility for the community, the LIBC has traditionally split the administrative responsibility and authority for emergency response between the Administrator for the Law and Order Department and the Executive Director of the Lummi Natural Resources Department. The Law and Order Administrator is responsible for the protection of life, property, and the rights of the Nation and its members. In accordance with CFR 300.610, the Natural Resources Executive Director is responsible for the protection of the natural resources of the Nation, including all resources on the Reservation and those off-Reservation resources used by Lummi members while exercising their treaty rights. The Draft Lummi Nation Comprehensive Emergency Management Plan (Appendix C), developed by the LIBC Safety Officer, identifies proposed roles and responsibilities of LIBC Officers, Department Directors, and staff.

Other LIBC departments involved in spill prevention and response include Cultural Resources, Education, Economic Development, Planning, and the Lummi Indian Family Enrichment (LIFE) Center. The LIBC department directors are responsible for assuring the safety of their employees, facility, and services as well as contributing department resources to the response and recovery efforts. While it is likely that outside assistance would be available in the event of an emergency, a large-scale disaster may require that the LIBC and individual departments be prepared to carry out disaster response and short-term recovery efforts on an independent basis.

In the event that an emergency response incident exhausts the capabilities and resources of the Lummi Nation, the LIBC Chairman or his/her designee will contact the appropriate local, state, or federal agency to request necessary assistance to protect the political integrity, safety, health, and welfare of the Lummi Nation and its members. The LIBC may assign all or part of this authority and responsibility to an officer, individual, or employee at their discretion. A general chain of command and policy for designating duties is proposed in the Draft Lummi Nation Comprehensive Emergency Management Plan (Appendix C).

4.2 SPILL PREVENTION

The federal and state regulatory requirements summarized in Section 2 and detailed in Appendix A and B of this plan unfortunately do not, by themselves, guarantee safety from chemical accidents. Some of the regulatory requirements, particularly the EPCRA and the CAA Risk Management Program, encourage communication between facilities and the surrounding communities about chemical safety and chemical risk. Many of the larger potential spill sources that could affect the Reservation are outside the Reservation boundaries and are not under the direct regulatory jurisdiction of the Lummi

Nation. Because the Lummi Nation is not responsible for regulating these sources, there is relatively little that the LIBC can do to prevent spills from these sources beyond reviewing and commenting on risk management and emergency response plans for facilities and transportation. Communication with off-Reservation facilities and jurisdictions is therefore an important aspect of spill prevention and response efforts by the Lummi Nation.

To reduce the risk from potential spill sources on the Reservation, the LNR Comprehensive Water Resources Management Program, which is being developed and implemented by the LNR Water Resources Division, includes elements that address spill prevention. These elements include the Wellhead Protection Program (LWRD 1997, 1998a), Storm Water Management Program (LWRD 1998b), Flood Damage Reduction Plan (LWRD 2001a), and Nonpoint-Source Management Program (LWRD 2001b, 2002). These programs and plans identify vulnerable areas and potential pollution sources on the Reservation and list recommended prevention measures to reduce pollution and the potential for contaminating spills. As discussed in Section 2.1, the Lummi Nation Water Resources Protection Code (Title 17), Land Use, Zoning, and Development Code (Title 15), Flood Damage Reduction Code (Title 15A), and Solid Waste Control and Disposal Code (Title 18) also help prevent spills of hazardous materials.

Although spill prevention measures have been taken at the specific facilities on the Reservation (Section 3.1), the LIBC has also undertaken general spill prevention measures Reservation-wide. In 1995, underground fuel storage tanks (USTs) were removed or brought into compliance at Fisherman's Cove. In 1996, the LIBC removed four USTs from the tribal center in order to comply with federal UST regulations. Small remaining volumes of hazardous materials were removed from the old maintenance building to the Whatcom County Disposal of Toxics facility when the LIBC Maintenance Department moved to a new location in 2003. The Maintenance Department currently stores only small volumes of paints, paint thinners, and other maintenance chemicals (Emley 2004). The LIBC Safety Office is currently conducting an inventory of chemicals stored at tribal facilities so that required Material Safety Data Sheets (MSDSs) can be placed at storage locations. This step should improve the safe handling of chemicals (Russell 2004).

4.3 INCIDENT COMMAND

The LIBC recognizes that the industry standard for response to disasters that threaten the community and environment is the Joint Incident Command System/ Unified Command format (ICS/UC). The LIBC will seek to ensure that a Tribal On-Scene Coordinator (OSC) is present in the Unified Command and at the Whatcom County Emergency Operations Center to represent the concerns of the Lummi Nation. Currently the LIBC Safety Officer is designated to coordinate efforts with the Whatcom County DEM. As required by Homeland Security Presidential Directive (HSPD) – 5, the Department of Homeland Security has recently developed the National Incident Management System (NIMS), which incorporates the Incident Command System, to provide a consistent cross-agency approach to emergency response. The resources of the LIBC may be available, as appropriate, to assist in response, assessment, and recovery efforts in the Reservation area. The Lummi Nation Comprehensive Emergency Management Plan (CEMP) proposes that the Lummi Nation will engage in such

cooperative emergency planning, response, mitigation, and restoration with other jurisdictions and industry as it may be deemed necessary, beneficial, and appropriate. A Mutual Aid Agreement would be one way to formally establish a cooperative arrangement with facilities and other jurisdictions and may be desirable for the Lummi Nation.

The purpose of the Unified Command is to ensure that the On-Scene Coordinators of each appropriate government and the responsible party agree on a course of action before the initiation of a response or recovery effort. Listed below in Table 4.1 are the typical members of a Unified Command team that would address a pollution release or other disaster that may threaten the community and the environment in the Reservation area. For spills on the Reservation, the federal OSC from the EPA or the Coast Guard (depending on the spill location) will act as the Incident Commander. For off-Reservation spills in Whatcom County, state regulations designate the Washington State Patrol as the Hazardous Materials Incident Commander for all jurisdictions, with the exception of jurisdictions that affirmatively retain such responsibility. Along state and interstate highway corridors, the Washington State Patrol is the designated incident command agency. For marine spills that affect Whatcom County, the Director of the Division of Emergency Management or the Director's designee assumes the position of Local On-Scene Coordinator within the Unified Command organization.

Table 4.1 Unified Command On-Scene Coordinators

Jurisdiction	Representative²
Federal	Environmental Protection Agency and Coast Guard
Washington State	Dept. of Ecology and Washington State Patrol
Tribal	Chief of Police, LNR Director, and LIBC Chairman
Whatcom County	Director, Division of Emergency Management
Fire Department	Fire Chief, Fire District #8 (Marietta) or #7 (Ferndale)
Responsible Party	Company Representative

As mentioned in Section 2.2, the five functions performed under the Unified Command through the ICS are command, operations, planning, logistics, and finance and administration. Further Unified Command and ICS information is attached in Appendices A and D. The Lummi Incident Command structure for LIBC employees, which is based on the Draft Lummi Nation Comprehensive Emergency Management Plan (CEMP) (Appendix C), is illustrated in Figure 4.1. Table 4.2 outlines the responsibilities of LIBC officers and key LIBC staff after activation of the CEMP (LIBC 2004). The Draft Nation CEMP is currently under revision and some changes in Figure 4.1 and Table 4.2 may result from this revision.

² Phone numbers listed in Appendix F

Figure 4.1 Lummi Nation Comprehensive Emergency Response Command Structure

Table 4.2 Roles and Responsibilities under the Lummi Nation Comprehensive Emergency Response Plan (CEMP)

CEMP Component	Position	Responsibilities
Incident Command Executive Team (ICE Team)	Chief Policy Officer	<ul style="list-style-type: none"> • Held by LIBC Chairman • Oversees decision making of ICE Team • Has authority to activate CEMP via notification of Lummi Police.
	Chief Administrative Officer	<ul style="list-style-type: none"> • Held by the LIBC General Manager • Ensures compliance, availability, and support of all LIBC personnel during response.
	Incident Commander	<ul style="list-style-type: none"> • Held by the Chief of Police • Implements the Incident Command System (ICS) • Has the authority to activate the Emergency Operations Center
Emergency Operations Center (EOC)	Information Officer	<ul style="list-style-type: none"> • Responsible for developing and releasing information about the incident to the news media, to incident personnel, and to other appropriate agencies and organization
	Safety Officer	<ul style="list-style-type: none"> • Develops and recommends measures to the IC/UC for assuring personnel health and safety and to assess hazardous and unsafe situations.
	Liaison Officer	<ul style="list-style-type: none"> • Serves as the point of contact for assisting and coordinating activities between the IC/UC and various agencies and groups.
	Operations Coordinator	<ul style="list-style-type: none"> • Responsible for all operations directly applicable to the primary mission of the response.
	Planning Coordinator	<ul style="list-style-type: none"> • Responsible for collecting, evaluating, and disseminating the tactical information related to the incident, and for preparing and documenting Incident Action Plans (IAPs).
	Logistics Coordinator	<ul style="list-style-type: none"> • Responsible for providing facilities, services, and materials for the response
	Administration and Finance Coordinator	<ul style="list-style-type: none"> • Responsible for all financial, administrative, and cost analysis aspects of the response
	Emergency Operations Officer (EOO)	<ul style="list-style-type: none"> • Designated by the Incident Commander • Responsible for operation of the EOC
Operations and Support	Division Directors and Department Managers	<ul style="list-style-type: none"> • Specified Department Managers are to make themselves available to the ICE Team and the EOC

4.4 INITIAL RESPONSE AND NOTIFICATION

Because of geographic proximity, mission, and staffing levels, Lummi Law and Order personnel will often be the first responder to the scene of an accident on the Reservation. Their responsibilities include securing the area, controlling traffic, and notifying appropriate response personnel. The first responder from Law and Order will initially contact 911 emergency dispatch to mobilize other local response vehicles as necessary. If 911 is notified before Lummi Law and Order, 911 personnel should contact Lummi Law and Order to initiate the local tribal response.

The National Response Center (NRC) and/or the Hazardous Spill office of the EPA Region 10 office in Seattle should be notified after 911. Since the EPA and Ecology spill response sections generally work closely together on accidental releases in Washington State, the EPA hazardous waste section suggests that a call to Ecology after EPA is notified may speed response efforts. Table 4.3 lists the order in which agencies should be notified and the emergency phone numbers for the agencies. (*Note: Whatcom County 911 emergency dispatch guidelines call for activating the local emergency response personnel first and then notifying Whatcom County DEM, and then DEM will notify the NRC, Washington State Patrol, and the WA EMD.*) In the case of a spill, it will also be important to notify the LIBC cultural resources staff and the LNR so that cultural and environmental resources receive consideration during the spill response. Contact numbers for hazardous materials facilities and other potential responders and a notification protocol are included in the Spill Response Binder (Appendix F).

Table 4.3 Order of Notification for Hazardous Spill Incidents

Order of Call	Response Agency	24-Hour Phone
1	Lummi Law and Order	911
2	Local Emergency Dispatch	911
3	National Response Center	1-800-424-8802
4	EPA Region 10	1-206-553-1263
5	Whatcom Co. DEM	360-676-6681
6	WA Department of Ecology, NW Region and/or WA Emergency Management Division	1-206-649-7000 1-800-258-5990 or 1-800-OILS-911

The Comprehensive Emergency Management Plan being developed by the LIBC Safety Office will be designed to address any disaster or emergency situation (not just spills) that may occur on-Reservation. The Comprehensive Emergency Management Plan will describe the mechanisms and structures by which the Lummi Nation will mobilize resources and coordinate response with local, state, and federal agencies. The LIBC Safety Office is encouraging and coordinating the development of facility, departmental, and program emergency response plans. These plans will be referenced within the comprehensive plan. The procedures in this SPRP complement and are consistent with the Draft Lummi Nation Comprehensive Emergency Management Plan and will comprise an appendix of the CEMP.

4.5 LUMMI NATURAL RESOURCES DEPARTMENT RESPONSE

Staff of the Lummi Natural Resources Department (LNR) must be notified and kept informed of any spill that could potentially affect natural resources of value to the Lummi Nation. A notification list of LNR staff has been provided to Lummi Law and Order, Lummi Tribal Sewer and Water District, pertinent LIBC departments, the Whatcom County DEM, and to the major industries near the Reservation. This notification list and transmittal letter with guidelines are included in the Spill Response Binder (Appendix F).

It is important that the expertise of the LNR staff be available to provide advice to emergency personnel on response options that may affect environmental resources. Although it would be best to have LNR technical staff that know the physical characteristics of the Reservation on-site to control resource damage, the OSHA regulations (29 CFR 1926.65(e)(7)) forbid untrained personnel from physically participating in recovery operations. Additionally, the NCP requires compliance with the OSHA provisions (OSHA 2001). The OSHA training requirements for spill response (29 CFR 1920.120(q)(6)) specify the different levels of training needed for the varying levels of involvement. Generally, 24 hours of training is required for emergency response and 40 hours of training is required for post-emergency response clean-up (OSHA 2001). Once the appropriate training course has been completed, an 8-hour refresher course must be successfully completed each subsequent year to retain certification. Further detail on OSHA training requirements is provided in Section 4.7.1 of this plan and in OSHA Bulletin 3172 (Appendix E). LIBC staff with OSHA training are listed in the Spill Response Binder (Appendix F). The LIBC or the responsible party for the spill needs to provide the necessary protective equipment to allow the trained staff to be on-site at a hazardous material spill.

The LNR department should be informed by Lummi Law and Order of all hazardous material spills as soon as possible. The LNR should then take the following steps:

1. The LNR staff member who receives a spill report should acquire as much information about the spill as possible and should record the information on an Incident Report form from the Spill Response Binder. The contents of the Spill Response Binder, which is a stand-alone document, are presented in Appendix F.
2. The LNR Director or his/her designee should then use the initial information to determine the initial response by the LNR. If the incident threatens natural resources, the initial response should include assigning appropriate staff to represent the LNR at the spill site, at a field operations location, and/or at the Unified Command.
3. A contact person should be designated at LNR to coordinate communication with assigned LNR staff, other LIBC departments, and with non-LIBC agencies.
4. To guide their actions, the LNR staff that are involved in a spill response should possess the LNR Spill Response Binder, which contains emergency spill response procedures and information. This binder includes first responder guidelines, communication information, and response equipment information.

5. At the end of the response effort, the involved LNR staff will write a memo to the Executive Director of the Natural Resources Department describing the spill and the response and clean-up efforts.

4.6 AVAILABLE SPILL RESOURCES

Lummi Law and Order personnel received 40-hour HAZWOPER training in 1998 (Appendix J) to qualify as first responders to determine the magnitude of a hazardous substance incident and to initiate the contact with appropriate emergency personnel. However, this training has expired and therefore does not allow the Lummi Law and Order personnel to be on-site at a hazardous material spill (29 CFR 1926.65). A 40-hour HAZWOPER class was offered at the LIBC in May 2004 to train appropriate staff. Staff from LNR, the Safety Office, Waste Management Operations/Project Clean-Up, the Fisherman's Cove mini-mart and pier, the Shell Mini-mart, and the Lummi Day Care Center completed this training (Appendix J). Because of limited money, equipment, and trained personnel, currently the Lummi Nation largely depends on off-Reservation services to provide response to hazardous spill accidents (although, as described in Section 7.2, the LNR Department acquired containment boom, spill kits, and sorbent materials in September 2004). As funds become available, the LIBC will acquire additional resources and training necessary to more actively participate in the response and recovery steps of hazardous material emergencies (LWRD 1998a).

An important resource for response to marine spills is effective boat access to shoreline areas. There are 12 Boat Access Points (BAPs) on the Reservation or on trust land near the Reservation. The locations, directions, and details for these BAPs are listed in Table 4.4, and the locations are shown in Figure 4.2. As described in Table 4.4, many of these access points are only usable at higher tides. Figure 4.3 is a nautical chart that shows marine water depths in fathoms in the Reservation vicinity when the tide level is 0.0 feet (mean lower low water). As indicated by the large area of shallow water, an oil spill hitting the Reservation shorelines during a low tide could impact a large area of valuable tidelands. Other nearby boat access points are listed in Table 4.5 and illustrated in Figure 4.4. These include access points at each refinery and along Gulf Road in the Cherry Point Heavy Impact Industrial Zone. The ALCOA-Intalco pier has a platform on the south side to tie-up and load boats, but there is no launching area at the Intalco facility.

Table 4.4 Beach/Boat Access Points On the Reservation

ID Code	Location	Directions	Notes ³
BAP 1	Neptune Beach	I-5 Exit 260, Slater Road west to end of Beach Way S.	Narrow access, soft substrate; only skiff or boom on trailer during higher tides, access affected by W winds, access at any tide with four-wheel drive vehicle.
BAP 2	Joe Finkbonner's vacant lot	Slater Road to Beach Way to Sucia Drive, south to lot just south of 4517 Sucia Drive	Beach access, up to ~30-foot boats at higher tides, smaller boats (and harder to take boats out) at lower tides, access at any tide with four-wheel drive vehicle. Often blocked by logs/debris, access affected by W winds.
BAP 3	Sandy Point Marina, north end	Slater Road to Sucia Drive to Thetis Way to Saltspring Drive	Private boat ramp, usable for most trailers; entrance channel shallow or exposed at lowest tides, ramp accessible at any tide with a four-wheel drive vehicle.
BAP 4	Sandy Point, South Cape	Slater Road to Sucia Drive to Thetis Way to Saltspring Drive	End of road on private property, entrance channel shallow or exposed at lowest tides, ramp accessible at any tide with a four-wheel drive vehicle.
BAP 5	Lummi Bay Hatchery facility	Slater Road to Haxton Way to west on Sea Pond Access South	Steep and narrow ramp, skiffs and small trailers only; accessible at tides \geq 6-feet, access at any tide with four-wheel drive vehicle.
BAP 6	Lummi Peninsula	Slater Road to Haxton Way to west at Cagey Road.	Beach access only, no boat access because of shallow depth.
BAP 7	Lummi Peninsula	Slater Road to Haxton Way. Between 2651 and 2637 Haxton	Beach access only, no boat access because of shallow depth.
BAP 8	Gooseberry Point	Slater Road to Haxton Way, on west side of Haxton Way across from Emma Road	Beach access only, no boat access because of shallow depth
BAP 9	Fisherman's Cove at Gooseberry Point	Slater Road to Haxton Way, south to Lummi View Drive	Public boat ramp, up to ~28-foot boats at \geq 4 foot (soft substrate at $<$ 4 foot high tides). Access affected by S, SE, and SW winds. Access at any tide with four-wheel drive vehicle.

³ All tide elevations are given in feet above Mean Lower Low Water (MLLW)

Table 4.4 Beach/Boat Access Points On the Reservation

ID Code	Location	Directions	Notes ³
			Beach access, up to ~28-foot (possibly larger) boats at any tide. Access affected by S, SE, and SW winds. Access at any tide with four-wheel drive vehicle.
			Crane on Lummi dock, boats up to 10,000 pounds at any tide
BAP 10	Stommish Ground	Slater Road to Haxton Way to Lummi View Drive, east and south to Stommish Ground	Public boat ramp, up to ~28-foot boats; no access at tides < 5 feet.
BAP 11	The Portage (spit connecting to Portage Island)	Slater Road to Haxton Way, south to Lummi View Drive and southern end of peninsula	Beach access, up to ~28-foot boats at tides ≥ 5 feet, smaller boats at tides < 5 feet. Access affected by SE and SW winds.
BAP 12	Hermosa Beach	Slater Road to Haxton Way to Lummi Shore Road, south to Hermosa Beach area	Beach access, limited to smaller boats at tides ≥ 6 feet; limited by debris on beach.
BAP 13	Fish Point area	Slater Road to Haxton Way to Lummi Shore Road, south to Native American Shellfish Co.	Skiffs only, with access limited by shallow river channel, periodic debris, and low tides. Accessible at tides ≥ 6 feet.
BAP 14	Marine Drive Bridge over the Nooksack River	Slater Road, south on Ferndale Road, east on Marine Drive to east bank of river	Skiffs only, limited by steep and narrow bank access, shallow river channel, and periodic debris. Accessible at tides ≥ 6 feet.
BAP 15	Marietta Slough	Slater Road, south on Ferndale Road, east on Marine Drive, south on Old Marine Drive	Skiffs only, limited by shallow river channel and periodic debris. Accessible at tides ≥ 6 feet.

Figure 4.2 Beach/Boat Access Points, Topography, Surface Water Drainages, Place Names, and Roads of the Lummi Reservation

Figure 4.3 Water Depths near the Lummi Peninsula

Table 4.5 Beach/Boat Access Points Off the Reservation

ID Code	Location	Directions	Notes
BAP 16	Birch Bay Village	I-5 Exit 270, Birch Bay-Lynden Road west to Birch Bay Drive, west on Birch Point Road to Birch Bay Village	Private boat ramp, usable for most trailers; BP has access for spill response. Access affected by W, SE, and SW winds.
BAP 17	BP Cherry Point Refinery dock	I-5 Exit 266, Grandview Road west to Jackson Road, south to security gate	Only small skiffs at high tide because of 4-ft drop-off; just north of pier; access affected by W, SE, and SW winds. BP also has boat launch on their pier.
BAP 18	Gulf Road	I-5 Exit 266, Grandview Road west to Kickerville Road, south to Alder, Lonseth, or Henry Road, west to Gulf Road, south to beach	Beach access, up to ~20-foot (possibly larger) boats; access limited by debris. Access affected by W, SE, and SW winds, access at any tide with four-wheel drive vehicle.
BAP 19	ConocoPhillips Refinery dock	I-5 Exit 260, Slater Road west to Lake Terrell Road, north to Unick Road, west to facility	Boat launch, no ramp; must access through refinery gate. Access affected by W, SE, and SW winds.
BAP 20	Ferndale/Hovander Park Public Boat Ramp (Nooksack River)	I-5 Exit 262, west on Main Street to just past railroad overpass, south on Hovander Road, follow signs west to river	Public boat ramp, usable for most trailers
BAP 21	Squalicum Harbor Marina	I-5 Exit 256, Meridian Street south to Squalicum Way and Roeder Avenue, southeast to marina just before T.J. Glenn Drive	Public boat ramps, usable for most trailers
BAP 22	Fairhaven Public Boat Ramp	I-5 Exit 250, Old Fairhaven Parkway west, north on 10 th Street, west on Harris Avenue to waterfront	Public boat ramp, usable for most trailers
BAP 23	Larrabee State Park, Teddy Bear or Wildcat Cove	I-5 Exit 250, Old Fairhaven Parkway west, south on Chuckanut Drive, west and then south on Cove Road	Public beach ramp/access, perhaps limited at low tides

Figure 4.4 Beach/Boat Access Points, Topography, and Surface Water Drainages, of Western Whatcom County

Off-Reservation resources that could respond to hazardous material emergencies on or near the Reservation include (LWRD 1998a):

- **U.S. Environmental Protection Agency (EPA):** The EPA is responsible for the management of hazardous waste spills that occur on tribal lands. The magnitude of the spill will influence the type of response and resources that would be needed.
- **U.S. Coast Guard (USCG):** The Coast Guard deals with hazardous spills that occur in marine waters. While not directly related to possible spills affecting upland and ground water resources on or near the Reservation, they may be called upon for such spills depending on the severity and location of a spill.
- **Washington State Department of Ecology (Ecology):** The EPA and Ecology spill response teams work together on many hazardous waste accidents within Washington State.
- **Washington State Patrol (WSP):** The WSP personnel are trained as incident commanders and in hazardous materials response.
- **Washington State Emergency Management Division (WEMD):** The WEMD coordinates the state response to an emergency, including operation of the state Emergency Operations Center and the activation of specialized personnel and equipment.
- **Whatcom County Division of Emergency Management (DEM):** The DEM operates a hazardous spill response vehicle that can aide in the clean-up and transport of minor spills. The DEM also has the capability through their command center to quickly access information that will help mobilize appropriate equipment and personnel efficiently.
- **Whatcom County Specialized Emergency Response Program (SERP):** The SERP administers a Hazardous Materials Unit and the Major Incident Support Team (MIST). The SERP volunteers are trained in hazardous material response, especially as it pertains to situations involving fire and explosive conditions. The SERP also runs the Community Alert Network (CAN) program, which simultaneously calls residents in a specified area within minutes to deliver emergency instructions (e.g., shelter in place or quickly evacuate).
- **Industrial Facilities:** All facilities that handle or store hazardous materials in quantities over certain thresholds, as defined by law, are required to have an active spill response plan in place and the equipment to effectively contain a spill. Because chemical industry representatives can be especially knowledgeable during the planning process, and because many chemical plant officials are willing and able to share equipment and personnel during a response operation, they may be called upon for assistance.

For oil spills, the Northwest Area Contingency Plan (NWACP) and the Geographic Response Plan (GRP) are important resources that provide guidance for spill response efforts. During a spill event, LIBC staff should ensure that the GRP actions intended to

protect Reservation resources are implemented. The North Puget Sound GRPs are provided in the Spill Response Binder which is attached as Appendix F of this plan. The effectiveness and adequacy of some of the measures described in the GRP for the Reservation have been questioned recently by spill response professional. As part of implementing this plan, the GRPs will be re-evaluated, any needed changes identified, and the GRPs will be revised as needed.

4.7 RECOMMENDATIONS FOR TRAINING AND EQUIPMENT

This section describes potential training and equipment that could help the LIBC provide a more effective response to hazardous material spills.

4.7.1 Training Recommendations

To assure that persons responding to an incident are prepared to assess potentially dangerous situations and take appropriate actions to protect themselves and others, several training courses are recommended. Federal law mandates that certain training courses and the associated certifications be obtained prior to employees conducting work in hazardous situations. Pursuant to 29 CFR 1910, employees should not be dispatched to investigate the release of hazardous materials without having first completed at least the four-hour First Responder Awareness Level training. The next level of training is First Responder Operations Level, which covers the appropriate emergency response. Federal law prohibits employees from being allowed to control the source of the spill and assist in assessment or recovery efforts without first having attained and maintained a hazardous waste worker certification through the Technician Level of training. To increase management experience, Tribal On-Scene Coordinators will be best prepared by attending the Incident Commander hazardous materials training (required), Unified Command Training, and Emergency Management Training and by participating in spill drills at facilities near the Reservation. Administrative and accounting personnel who will help in recovering the costs incurred by LIBC during assessment and recovery efforts should attend a documentation and billing class offered by the Federal Emergency Management Agency. Table 4.6 lists both required and suggested training courses and makes recommendations for which LIBC staff members should receive each course.

In addition to the courses listed in Table 4.6, LIBC officers and/or management staff should conduct periodic tabletop drills to familiarize each other with procedures outlined in the Comprehensive Emergency Management Plan (CEMP) being developed by the LIBC Safety Officer. Staff who will monitor the actions of outside organizations during a spill event should attend spill drills at facilities in the area to familiarize themselves with procedures and potential scenarios. Once formed, the Lummi Spill Response Team should also practice deploying the spill containment booms at the Seamonds dike, at the Fisherman's Cove pier, and at the hatchery water supply intake along the Nooksack River. Such practice should result in personnel who know their responsibilities and how to quickly implement those responsibilities when an incident occurs.

Table 4.6 Required and Recommended Spill Response Training

	Training Level	29 CFR 1910.120	Course hours	Authorized Response Activities	LIBC personnel ⁴
OSHA Training	First Responder Awareness Level	(q)(6)(i)	4	<ul style="list-style-type: none"> • Individuals likely to witness or discover a hazardous substance release • Individuals trained to initiate emergency response by notifying proper authorities • Will not take further action 	<ul style="list-style-type: none"> • Fishermen • General public
	First Responder Operations Level	(q)(6)(ii)	8	<ul style="list-style-type: none"> • Individuals who respond to releases as part of the initial response to protect people, property, and the environment. • Trained to act defensively <u>without trying to stop the release.</u> • Function is to contain the release from a safe distance, keep it from spreading, and prevent exposures. • Must be able to demonstrate competency in Awareness Level activities. 	<ul style="list-style-type: none"> • LIBC Chairman • Incident Commander (Chief of Police) • LNR Executive Director • LNR Environmental Program Director • Fishermen's Cove and Shell Mini-mart staff • Fishermen
	Hazardous Materials Technician	(q)(6)(iii)	24	<ul style="list-style-type: none"> • Individuals who respond for the purpose of stopping the release. • Can approach the point of release. 	<ul style="list-style-type: none"> • Spill Response Team • LNR Water Resources staff • Boat launch operators • Fisherman's Cove and Shell Mini-mart managers • Fishermen • Law and Order- Natural Resources officers • Hatchery staff • Waste Management Team members • LTSWD staff

⁴ Because the OSHA hazardous materials courses are hierarchical, groups are only listed in they highest category that they are recommended to take (i.e. those recommended for the Hazardous Materials Technician course are not also listed under First Responder Awareness level class).

Table 4.6 Required and Recommended Spill Response Training

	Training Level	29 CFR 1910.120	Course hours	Authorized Response Activities	LIBC personnel ⁴
OSHA Training	Hazardous Materials Specialist	(q)(6)(v)	24	<ul style="list-style-type: none"> Individuals who respond and provide support to Technicians. Duties require a more specific knowledge of substances they may be likely to be called upon to contain than Technician Level Acts as a site liaison with other government authorities. 	<ul style="list-style-type: none"> Spill Response Team LNR Water Resources Staff Safety Officer
	General Site Worker	(e)(3)(i)	40	<ul style="list-style-type: none"> Individuals who will be in contact with hazardous substances at levels above the Permissible Exposure Limit (PEL) established by OSHA. This certification is required for persons who work in a position related to hazardous materials response or recovery. 	Lummi Nation Safety Officer will not allow LIBC personnel to be on-scene in these conditions.
	Incident Commander	(q)(6)(iv)	8	<ul style="list-style-type: none"> Will assume control of the incident beyond the first responder awareness level. Shall have at least 24 hours of training equivalent to First Responder Operations Level plus competency in additional areas. 	<ul style="list-style-type: none"> Chief of Police LNR Executive Director Environmental Program Director
NIMS/ICS Training	NIMS training IS-700		3	<ul style="list-style-type: none"> Explains the purpose, principles, key components, and benefits of the National Incident Management System (NIMS). 	<ul style="list-style-type: none"> Tribal leaders All LNR and LIBC staff involved in emergency response
	ICS Operations level			<ul style="list-style-type: none"> Introduces principles, structure, terminology, and common responsibilities of ICS Students will be able to perform an ICS support role 	<ul style="list-style-type: none"> All LIBC personnel
	ICS Commander level			<ul style="list-style-type: none"> Familiarizes executives of response agencies with their responsibility and authority in the UC format. Training offered through USCG 	<ul style="list-style-type: none"> Chief of Police LNR Director Other Department Directors CEO Chairman

Table 4.6 Required and Recommended Spill Response Training

	Training Level	29 CFR 1910.120	Course hours	Authorized Response Activities	LIBC personnel ⁴
Other	Emergency Management Training			<ul style="list-style-type: none"> • Offered by FEMA and WEMD • Covers response to many natural and man-made emergencies 	<ul style="list-style-type: none"> • Law and Order • Safety Officer • LNR staff
	Spill Drills			<ul style="list-style-type: none"> • Required at facilities by federal and state law. • Offers familiarization with and practice of the UC/ICS structure 	<ul style="list-style-type: none"> • Chief of Police • Department Directors • Safety Officer • Spill Response Team • LNR staff
	Recovery Documentation and Preparation		8	<ul style="list-style-type: none"> • Offered by FEMA • Gives familiarization with FEMA forms and policies for recovering costs associated with emergency response. 	<ul style="list-style-type: none"> • CEMP Admin. and Finance Coordinator • LNR staff

4.7.2 Equipment Recommendations

The following equipment is recommended to improve the capability of the Lummi Nation to respond to a spill event:

Spill Response Binder: Binders containing spill response procedures and guidance should be available for each employee involved in a spill response. These binders should contain notification protocols, phone numbers, equipment inventories and locations, and response procedures. Each binder should be brightly colored and well-marked so that it can be quickly located and used. The contents of this binder are included as Appendix F of this plan.

Communication: Key LIBC personnel that are involved in a spill response effort must be able to communicate with each other. The appropriate equipment must provide communication in the field and in the event that phone lines are not functioning. The Nextel phones provide this communication if the signal is available, but reception is currently not available everywhere on the Reservation. The second option is two-way portable VHF radios, which the LIBC Maintenance Department and Lummi Law and Order currently possess. If the Nextel phones are inadequate, LNR staff should either use the several radios available in Maintenance or acquire additional radios.

Containment Boom: The LNR Department has purchased 1,400 feet of American Marine standard containment boom with 8-inch diameter, 6-foot long logs and a 12-inch long containment skirt. The boom is made of closed-cell polyethylene foam covered with 22 ounce PVC fabric and has universal connectors and heavy duty anchor points. The boom was purchased in thirteen, 100-foot sections and two, 50-foot sections. It is stored in an 8 foot wide, 8 foot tall, 20 foot long shipping container located behind the Lummi Oyster Hatchery at 3801 Haxton Way. The container is secured with a padlock which is keyed to the LT2 key made by Accurate Lock Service, Inc. in Bellingham.

This boom was purchased primarily for use at Gooseberry Point and the Seaponds tidegates in Lummi Bay. Deployment at Gooseberry Point should be performed according to deployment scenario NPS 18 in the North Puget Sound GRPs (Appendix F) for spills from the facilities to the north of the Reservation and as needed for local spills. This boom will not be particularly effective under high current or wave conditions (oil generally starts to be entrained under the boom at 0.7 knots, regardless of skirt depth), but larger boom is not recommended because the relatively small percentage of containment gained is not worth the greater cost, storage space, and deployment difficulty. It should be noted that the only fuel currently supplied at the Fisherman's Cove pier, gasoline, should not be contained with boom since such containment will increase the ignition and vapor hazard. However, it could be desirable to use the boom to protect the shoreline or other boats from gasoline. When spilled on water, gasoline should otherwise be allowed to spread and evaporate. Boom will be useful at Fisherman's Cove if a boat sinks or is disabled and is leaking hydraulic fluid, diesel fuel, or oil or if an accident causes such a spill. The Whatcom County ferry that serves Gooseberry Point uses diesel fuel and is a potential spill source.

Boom deployments to protect the Seaponds tidegates should be performed according to the schematics and GRPs included in the Spill Response Binder (Appendix F). In the

event of a spill associated with the activities of the salmon or oyster hatcheries, a small amount of boom can be used to contain the spill, and absorbent materials can be used to clean up the spill if it is not too large. To best protect the Seaponds from spills, it is recommended that the tidegates be repaired so that they can be closed. Table 4.7 lists the spill equipment purchased and stored in the container and describes the use of each item. All of the equipment is stored in the container at the hatchery to simplify management and inventory.

It is noted that personnel deploying the containment boom and spill kit equipment in the presence of hazardous materials must be certified with the appropriate hazardous materials training as required by OSHA. Refer to the OSHA regulations and Bulletin 3172 (Appendix E) for the required training for specific response activities.

Spill Kits: Nine spill kits of various types and sizes have been purchased and are listed in Table 4.7. Oil-only spill kits absorb petroleum products, but not water, and are therefore good for wet conditions. The universal kits absorb most if not all hazardous materials (including acids), but also absorb water and are therefore less effective when water is present. The two mini-marts currently each have one 30-gallon oil-only kit and the Fisherman's Cove pier has a similar 20-gallon kit. The Lummi Shell Mini-Mart recently used everything in its kit to cleanup an approximately 15-gallon spill of gasoline. They immediately replaced the kit and purchased an additional supply of pads. A large 55-gallon, oil-only kit is appropriate for the Fisherman's Cove pier to ensure the ability to cleanup a larger spill from a boat or other source. Only small volumes of chemicals are stored at the Seapond Aquaculture facilities, and no fuel tanks are located at the Seaponds. An oil-only and a universal 20-gallon kit have been purchased for this site and are both stored in the container. Both oil-only and universal 30-gallon kits have been purchased for construction sites on the Reservation. An oil-only 30-gallon kit has been provided to each sewer treatment plant as an extra precaution and to provide sewer district employees with the ability to respond to oil or fuel spills in the vicinities of the two treatment plants. A mechanism and a funding source will need to be identified to maintain this supply of kits.

Self-Contained Breathing Apparatus (SCBA): The Lummi Tribal Sewer and Water District has three units for use during chlorine tank transfers and should ideally have one more so that a back-up unit is available at each wastewater treatment plant. These units could possibly be used in a hazardous material response to a spill elsewhere on the Reservation as long as the users have the proper OSHA training.

Additional Supplies: Although the majority of the spill equipment has been purchased, additional support items are still needed including a portable air quality monitor to determine PELs, high power flashlights for nighttime response, more personal protective equipment such as Tyvek suits and boots, and fence posts and drivers to secure oil snare along the shorelines.

4.8 POTENTIAL FUNDING SOURCES

In addition to limited LIBC funding to implement spill prevention and response activities, other funding sources, such as the EPA General Assistance Program grant to the LNR

Table 4.7 Inventory of Lummi Nation Spill Response Equipment

Item	Unit	Quantity	Use
Containment Boom	100 feet	13	For the exclusion, containment, deflection, or collection of hazardous substances.
Containment Boom	50 feet	2	
Tow bridle with bullet float	Each	6	Two to pull each end of one length of boom at Fisherman's Cove. Four for Lummi Bay: one each for the two large tidegates and two extra for other potential boom deployments.
Boom repair kit	Each	1	To repair holes in boom fabric
Anchor system – 22 lb Danforth	Each	4	To form a square deployment at Fisherman's Cove.
Anchor system – 40 lb Danforth	Each	5	For Lummi Bay: three for the two large tidegates and two extra for other potential boom deployments.
Spill kit, oil-only, 20 gallon	Each	1	To cleanup small spills at the aquaculture facility
Spill kit, oil-only, 30 gallon	Each	2	To cleanup small spills at construction sites
Spill kit, oil-only, 30 gallon	Each	2	To cleanup small spills at the two sewer treatment plants
Spill kit, oil-only, 55 gallon	Each	1	To cleanup small spills at the Fisherman's Cove warehouse
Spill kit, universal, 20 gallon	Each	1	To cleanup small spills at the aquaculture facility
Spill kit, universal, 30 gallon	Each	2	To cleanup small spills at construction sites
Oil-sweep, 19"x100 feet	Each	10	A 100 foot long string of sorbent pads to absorb small spills or residual oil from the water surface. Sweep is more efficient and easier to retrieve than individual pads.
Oil snare, 30 on 50 foot rope	Each	10	Pom-poms of oleophilic fibers strung on a rope that adsorb heavier oil. To be used along the shoreline and inside the tidegate runways.
Sorbent boom, 5"x10'	4/bale	5	A five inch diameter boom of absorbent material. Use to absorb small spills, residual oil, or oil that escapes containment boom and to provide an extra line of defense in the tidegate runways or Seapond.
Sorbent pads, 16"x20"	200/bale	5	Square pads of absorbent material to absorb small spills or residual oil from water or ground surface.
Screened pitchforks	Each	4	Tools to collect soiled pads.
Disposal bags	50/box	4	Six millimeter thick clear, plastic bags for disposal of soiled response equipment.
Raingear	20/case	1	For the protection of responders
Rubber gloves	72/case	1	For the protection of responders

for oil booms and spill kits, can be used to significantly improve LIBC response capabilities. The formation and funding of the Department of Homeland Security and an increased focus on tribal support by the FEMA, has made more funds available to tribes for general disaster planning, training, and response. The FEMA programs include funds for training and equipping first responders. In addition, funding and training opportunities may be available through the industries that represent the greatest threat to the Reservation. This section describes some specific potential funding sources.

The Hazardous Materials Training Program (SARA Title III Training Program, Catalog of Federal Domestic Assistance [CFDA] Number 97.020) makes funding available to federally recognized tribal governments to provide training in support of emergency planning, preparedness, mitigation, response, and recovery capabilities. (States and U.S. territories must apply for Emergency Management Performance Grants.) These programs must provide special emphasis on emergencies associated with hazardous chemicals. Funding can be used to pay for training and education from Federal training activities and conferences, state training programs, private sector training, university training centers, and other training sources. Funding may also be used to pay for contractual services acquired for the specific purpose of training and educating the tribes (GSA 2004). To apply, tribes must submit the following to the FEMA Regional Office: (1) a work plan, (2) a narrative describing the relative priorities of the training activities and how they address Title III objectives for that Tribe, (3) documentation as to how the tribe will satisfy the 20 percent nonfederal matching fund requirement of Title III, and (4) a proposed schedule of training activities by title, location, and date (GSA 2004). Further application information is available from the FEMA Regional Training Officer and the online CFDA: <http://12.46.245.173/CFDA/pdf/catalog.pdf>.

The Hazardous Materials Assistance Program (CERCLA Implementation, CFDA Number 97.021) provides technical and financial assistance through the states to support state, tribal, and local governments in oil and hazardous materials emergency planning and exercising (GSA 2004). The objective is to enhance state, tribal, and local government capabilities to participate in the National Response System (NRS). The funds are available to states, tribes, local governments, U.S. territories, State Emergency Response Committees (SERCs), and Local Emergency Planning Commissions (LEPCs). Applications must include a work plan describing program objectives, the method for meeting the objectives, a list of activities, the length of each activity, and the planned accomplishments (GSA 2004). Additional application information is available from the FEMA Regional Training Officer and the online CFDA.

The Chemical Emergency Preparedness and Prevention (CEPP) Technical Assistance Grants provided by the EPA offer funding to tribes in establishing TERCs, in developing emergency plans, and in preparing to integrate accident prevention information into their plans. These activities are related to EPCRA and Section 112(r) of the CAA. Further information on the CEPP grants can be obtained on the EPA website (www.epa.gov/ceppo).

The Hazardous Materials Emergency Preparedness (HMEP) grant program, offered by the U.S. Department of Transportation under the Hazardous Material Transportation Act, is designed to support the framework established within the NRS and EPCRA by providing states, tribes, and local jurisdictions with financial and technical support,

national direction, and guidance to enhance hazardous materials emergency planning and training. The HMEP Grant Program distributes fees collected from shippers and carriers of hazardous materials to emergency responders for hazardous materials (Hazmat) training and to LEPCs for hazardous materials planning. More information is available at hazmat.dot.gov/hmep.htm or by calling 202-366-0001. The HMEP funds may be used for (NRT 1998):

- Developing and improving emergency plans under EPCRA;
- Conducting commodity flow studies;
- Determining the need for regional hazardous material response;
- Annual training for local responders, including volunteers, to respond safely and efficiently to accidents and incidents involving hazardous materials.

The Oil Spill Liability Trust Fund is a source of funding for oil removal costs, including the cost of monitoring removal actions. It is administered by the Coast Guard National Pollution Funds Center. An Emergency Fund is used to fund removal actions by On-Site Coordinators, to initiate Natural Resource Damage Assessments, and to fund immediate removal actions by states. A Principal Fund is used to pay claims against the Trust Fund and to carry out other Oil Pollution Act requirements. The Trust Fund is available to pay uncompensated removal costs determined to be consistent with the NCP or uncompensated damages. For hazardous substance releases, the CERCLA Superfund serves a similar role (NRT 1998).

The Local Government Reimbursement (LGR) program of the EPA is designed to cover costs associated with some necessary emergency actions, including measures necessary to prevent or mitigate injury to human health or the environment associated with the release or threatened release of any hazardous substance (or pollutant). The amount of reimbursement for any single emergency response may not exceed \$25,000 (NRT 1998). On February 18, 1998, the EPA published a new LGR regulation that simplifies and streamlines the process for applicants. Local governments obtain and complete a simple LGR application form which requires a local government to provide basic information about the incident, document its response costs by attaching copies of receipts, and certify that certain program requirements have been met. Information on eligibility to participate in the LGR program is available via the LGR HelpLine at 800-431-9209 or on the EPA website (<http://www.epa.gov/superfund/programs/er/lgr/index.htm>).

A comprehensive source of financial assistance information is the *Tribal Environmental and Natural Resource Assistance Handbook* produced by the Domestic Policy Council Working Group on American Indians and Alaska Natives. This handbook provides a central location for federal sources of technical and financial assistance available to Tribes for environmental management. The handbook is available online at www.epa.gov/indian/index.htm.

4.9 ACTION PLAN

The following actions are recommended to implement this SPRP, reduce the probability of hazardous material spills, and to improve the Lummi Nation's response to spills:

- Implement the Emergency Planning and Community Right to Know Act (EPCRA) on the Reservation through the formation of a Tribal Emergency Response Commission (TERC). A Lummi Nation TERC would coordinate and implement emergency response activities according to EPCRA including acquisition of Federal grant funds, develop and review LEPC plans, and establish procedures for public information.
- The TERC should coordinate with the other area spill response organizations such as the Region 10 Regional Response Team, the Northwest Area Committee, the Washington State SERC, and the Whatcom County LEPC.
- Establish a Lummi Nation Spill Response Team. This team should consist of tribal members who are familiar with the Lummi Nation Waters, shorelines, and tidelands and who can commit to participating in training and to incident response. By establishing a designated team, training resources can be focused on a set group of people who will have the time, capability, and interest to provide effective response.
- Assess and acquire appropriate training for the TERC, the Spill Response Team, LIBC personnel, and community members.
- Maintain inventory of communication and response equipment and upgrade as needed.
- Establish a schedule and conduct appropriate spill response drills.
- Develop or review Pollution Prevention Plans (P3s) for Reservation facilities as necessary.
- Establish and/or maintain appropriate coordination with Whatcom County DEM and other agencies.
- Establish Mutual Aid Agreements with Whatcom County DEM and facilities near the Reservation.
- Offer public education opportunities specific to hazardous materials spills such as the four-hour First Responder Awareness Level hazardous materials training.
- Develop a plan for providing spill information to Reservation residents through coordination of the LIBC Safety Office and the LIBC Communication office with established Whatcom County DEM and radio public information procedures and public meetings.
- Continue to review and provide comments to the Northwest Area Committee and the Region 10 Regional Response Team on the Geographic Response Plans for adequate protection of tribal resources.
- Participate on the Washington State Department of Ecology Spills Program Resource Damage Assessment (RDA) committee (RDA) or other appropriate groups for spills that impact the Reservation and the Lummi Usual and Accustomed hunting,

fishing, and gathering grounds and stations to ensure consideration and best possible protection of tribal resources.

- Identify and pursue potential federal, state, and local funding for training, purchase of additional equipment, maintenance of existing equipment, and tidegate repair.

These actions should be pursued in coordination with the LIBC Safety Office and the Lummi Nation Comprehensive Emergency Management Plan that is being developed by the Safety Office.

5. SUMMARY

Large amounts of crude oil, petroleum products (e.g., gasoline, jet fuel), and other hazardous materials are transported by ships, pipelines, trucks, and railroad and are stored on or near the Reservation. Accidents, equipment failure, and human error have the potential to cause large spills and disastrous human and environmental consequences. Some of these hazardous materials pose a toxic inhalation hazard to people. Oil and chemical spills or releases in waters on or adjacent to the Reservation could destroy the highly productive and valuable ecosystems, and a spill on land would threaten public safety and health and the environment. To date, the Lummi Nation has not suffered a large hazardous material spill on the Reservation. However, future residential, municipal, commercial, and industrial growth on the Reservation, in the Cherry Point Heavy Impact Industrial Zone, and in the area north of the Reservation will increase the risk of a hazardous material emergency on the Reservation. Because of the potential consequences, it is important for Lummi Nation to develop and practice a plan and to coordinate with other jurisdictions for an effective response to a hazardous material spill or release.

Preventing spills and minimizing damage from spills are important elements of spill plans. In addition to tribal and federal regulations, implementation of development regulations and review of projects by the LIBC Technical Review Committee will continue to help reduce the potential for hazardous material spills, particularly smaller scale spills. The potential for large-scale spills exists primarily off-Reservation and is addressed by federal and state regulations. The Lummi Nation can help protect its people and resources by reviewing spill prevention and response plans for facilities in the Reservation area and by ensuring that pollution prevention plans are developed for facilities on the Reservation.

Maximizing spill prevention and response will require an additional investment of resources by the Lummi Nation. Measures necessary to maximize spill prevention efforts and spill response preparedness include devoting additional staff time to review, develop, and implement pollution prevention plans; training and equipping staff for response to and recovery from hazardous material spills; and design and construction costs associated with future storage facilities. Although substantial investments to meet these challenges have occurred, continued and/or increased investments are needed. In addition to prevention and response, recovery from spills will also present a financial challenge to both the LIBC and individuals. Given the relatively low median income for tribal members, the damages and economic disruption caused by a hazardous material spill will be difficult to recover from without assistance.

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LIST OF ACRONYMS AND ABBREVIATIONS

Programs and Terms	
ACP	Area Contingency Plan
CAA	Clean Air Act
CEMP	Comprehensive Emergency Management Plan
CEPP	Chemical Emergency Preparedness and Prevention
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFDA	Catalog of Federal Domestic Assistance
CFR	Code of Federal Regulations
CWA	Clean Water Act
EPCRA	Emergency Planning and Community Right-to-Know Act
FEMA	Federal Emergency Management Act
GIS	Geographic Information System
GRP	Geographic Response Plans
HAP	Hazardous Air Pollutant
HAZWOPER	Hazardous Waste Operations and Emergency Response
HMEP	Hazardous Materials Emergency Preparedness
ICP	Integrated Contingency Plan
ICS	Incident Command System
LGRP	Local Government Reimbursement Program
LTSWD	Lummi Tribal Sewer and Water District
MIST	Major Incident Support Team
MOC	Memorandum of Cooperation
MSDS	Material Safety Data Sheet
NCP	National Contingency Plan
NIIMS	National Interagency Incident Management System
NIMS	National Incident Management System
NPDES	National Pollutant Discharge Elimination System
NRC	National Response Center
NRS	National Response System
NWACP	Northwest Area Contingency Plan
OCA	Off-site Consequence Analysis
OPA	Oil Pollution Act
OSC	On-Scene Coordinator
RCP	Regional Contingency Plan
RCRA	Resource Conservation and Recovery Act
RMP	Risk Management Plan
SARA	Superfund Amendments and Reauthorization Act
SERP	Specialized Emergency Response Program
SPCC	Spill Prevention, Control, and Countermeasure
SPRP	Spill Prevention and Response Plan
TRC	Technical Review Committee
TRI	Toxics Release Inventory

LIST OF ACRONYMS AND ABBREVIATIONS

UC	Unified Command
U.S.C.	United States Code
WCHMP	Whatcom County Hazardous Materials Plan
Agencies and Organizations (Parent Organization)	
BIA	Bureau of Indian Affairs
BP	British Petroleum
Ecology	Department of Ecology, Washington State
EPA	Environmental Protection Agency
DEM	Division of Emergency Management
FEMA	Federal Emergency Management Agency
LEPC	Local Emergency Planning Committee
LIBC	Lummi Indian Business Council
LNR	Lummi Natural Resources Department
LTSWD	Lummi Tribal Sewer and Water District
LWRD	Lummi Water Resources Division
NOAA	National Oceanic and Atmospheric Administration
NRT	National Response Team
OSHA	Occupational Safety and Health Administration
RRT	Regional Response Team
SERC	State Emergency Response Commission
TERC	Tribal Emergency Response Commission
USCG	United States Coast Guard
USDI	U.S. Department of the Interior
USDOT	U.S. Department of Transportation
USEPA/EPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service (USDI)
WCDEM	Whatcom County Division of Emergency Management
WEMD	Washington State Emergency Management Division

Appendix A: The Legal Context of Water and Air Pollution

Federal laws such as Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986; the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); the Resource Conservation and Recovery Act (RCRA); the Federal Emergency Management Act (FEMA); and Occupational Safety and Health Administration (OSHA) regulations require handlers or transporters of hazardous materials to report dangerous materials and to have an active spill response plan prepared. In the event of a spill, the cost of clean-up lies with the facility or transporter involved (NRT 1987). Having site-specific plans in place helps to contain hazardous materials during the critical initial moments following an unplanned release.

The United States Environmental Protection Agency (EPA) is the primary federal regulatory agency responsible for the development of policies to protect the population and environment of the United States from adverse effects of pollution. The EPA is required by law to implement the requirements of many congressional acts, including four that are particularly important to spill prevention and response: the Clean Water Act, the Emergency Planning and Community Right-to-Know Act, the Oil Pollution Act of 1990, and the Clean Air Act. Additionally, Title 17 of the Lummi Nation Code of Laws, the Water Resources Protection Code, includes provisions to protect Reservation water from hazardous substance spills. This section summarizes the key provisions of these rules as they relate to prevention and response of oil and hazardous substance spills and specifically to the development and implementation of the Lummi Nation Spill Prevention and Response Plan.

THE CLEAN WATER ACT

The federal Water Pollution Control Act (33 U.S.C. 1251-1376; now commonly referred to as the Clean Water Act) was first enacted in 1948 and has been amended many times to add provisions that reduce the levels of water pollution. The 1970 amendments authorized the determination of quantities of oil that would be harmful if discharged and the development of a National Contingency Plan (NCP) to minimize damage from oil discharges. The NCP was developed by the EPA and the United States Coast Guard (USCG) under their Section 311 authority to establish a program to prevent, prepare for, and respond to spills that occur in navigable waters of the United States (EPA 2004a). The EPA also implements provisions of the CWA and the Oil Pollution Prevention regulation (40 CFR 112) through the Spill Prevention, Control, and Countermeasure Program (SPCC) which seeks to prevent oil spills from certain aboveground and underground storage tanks.

The Water Pollution Control Act Amendments of 1972 set the basic structure for regulating discharges of pollutants to waters of the United States⁵, including establishment of the National Pollutant Discharge Elimination System (NPDES). Through the NPDES, the CWA makes it unlawful for any person to discharge any pollutant from a point source into navigable waters without a permit (EPA 2003a, 2004a).

⁵ Waters of the United States include all waters currently or historically used for interstate or foreign commerce, including waters subject to the ebb and flow of tides and many lakes, rivers, streams and wetlands.

The State of Washington, through the Department of Ecology (Ecology), has been delegated the NPDES management and enforcement duties in the State, although the EPA still retains oversight responsibility and implements the CWA on all federal lands (i.e., military bases, national forests, and Indian reservations). The 1972 amendments also included provisions that further defined liability for discharges of oil and hazardous substances and clarified the federal role in clean-up operations.

The Clean Water Act (CWA) of 1977 and the Water Quality Act of 1987 provided further extensive amendments to the original statute (USFWS 2003). The 1987 amendments to Section 518 authorized the EPA to treat qualified Indian tribes as states by delegating regulatory authority for specified sections of the Act. Delegated activities include the authority to grant discharge permits under the NPDES, to grant dredge and fill permits under §404, and to set water quality standards under §303 (Slade and Stern 2004).

THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT

The Emergency Planning and Community Right-to-Know Act (EPCRA; Title III of the Superfund Amendments and Reauthorization Act [SARA]) was enacted by Congress in 1986 in response to concerns about the environmental and safety hazards posed by the storage and handling of toxic chemicals. These concerns were triggered by the death or injury of over 50,000 people after the accidental release of 40 tons of methyl isocyanate from a chemical plant in Bhopal, India in 1984 (Nationmaster 2003). The EPCRA was designed to help local communities protect public health and safety and the environment from chemical hazards. It establishes requirements for federal, tribal, state, and local governments and for industries regarding emergency planning and reporting on hazardous and toxic chemicals. The Community Right-to-Know provisions help increase public knowledge and access to information on the amounts, uses, and releases of chemicals at individual facilities. Governments can use this information to improve chemical safety and protect public health and the environment through emergency planning (EPA 2000). Regulations implementing EPCRA are codified in Title 40 of the Code of Federal Regulations (CFR), parts 350 to 372. The chemicals covered by each of the sections vary, with some overlap, and the quantities that trigger reporting also vary (EPA 2000).

To implement EPCRA, Congress required each state to appoint a State Emergency Response Commission (SERC). The SERCs were required to divide their states into Emergency Planning Districts and to name a Local Emergency Planning Committee (LEPC) for each district. Similarly, tribes can appoint a Tribal Emergency Response Commission (TERC) to coordinate and implement emergency response activities. However, tribes can choose between several options for implementation of EPCRA programs. A tribe may enter into cooperative agreements with another tribe, a consortium of tribes, or the state within which its lands are located to develop a program that meets tribal needs. Examples of tribal EPCRA implementation include (EPA 2002):

- A tribe may directly implement the program on its lands;
- Through a cooperative agreement with the SERC, a tribe may choose to implement some, but not all, of the EPCRA requirements, while the state implements the remainder; or

- A tribe authorizes the SERC to perform the functions of the TERC within tribal lands, and the tribe establishes an LEPC or joins an off-reservation LEPC that works directly with the SERC through a cooperative agreement.

If a TERC is not established or a cooperative agreement is not developed, the tribal chief executive officer operates as the TERC (EPA 2002).

The EPCRA has four major provisions:

- Emergency response planning (Sections 301-303);
- Emergency notification of hazardous chemical releases (Section 304);
- Reporting requirements for hazardous chemical storage (Sections 311-312); and
- Toxic chemical release inventory (Section 313).

Information derived from these four requirements will help states, tribes, and communities develop a broad perspective on chemical hazards for the entire community as well as for individual facilities. Regulations implementing EPCRA are codified in Title 40 of the Code of Federal Regulations (CFR), parts 350 to 372. The chemicals covered by each of the sections vary, with some overlap, and the quantities that trigger reporting also vary (EPA 2000).

Emergency Response Planning

Community emergency response plans for chemical accidents are developed under Section 303 of EPCRA. Emergency response plans contain information that community officials can use at the time of a chemical accident. The plans must (EPA 2000):

- Identify facilities and transportation routes of extremely hazardous substances;
- Describe emergency response procedures, both on- and off-site;
- Designate a community coordinator and facility coordinator(s) to implement the plan;
- Outline emergency notification procedures;
- Describe how to determine the probable area and population affected by releases;
- Describe local emergency equipment and facilities and the persons responsible for them;
- Outline evacuation plans;
- Provide a training program for emergency responders (including schedules); and
- Provide methods and schedules for exercising emergency response plans.

Under EPCRA, industries storing hazardous chemicals above minimal levels set by the EPA must file a Risk Management Plan for a worst case release of the most threatening

chemical stored on site. The EPA requires industries to plan for a 100 percent release in ten minutes and that the plans include areas that the release would reach in the first 30 minutes.

Emergency Notification

Under Section 304 of EPCRA, facilities must immediately notify the LEPC and the SERC (or TERC) if there is a release into the environment of a hazardous substance that is equal to or exceeds the minimum reportable quantity set in the regulations. This requirement covers the 356 extremely hazardous substances listed under Section 302 of EPCRA as well as the more than 700 hazardous substances subject to the emergency notification requirements under Section 103(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also known as Superfund, 40 CFR 302.4). Some chemicals are common to both lists. Initial notification can be made by telephone, radio, or in person. Emergency notification requirements involving transportation incidents can be met by dialing 911, or in the absence of a 911 emergency number, calling the operator. This emergency notification needs to include (EPA 2000):

- The chemical name;
- An indication of whether the substance is extremely hazardous;
- An estimate of the quantity released into the environment;
- The time and duration of the release;
- Whether the release occurred into air, water, and/or land;
- Any known or anticipated acute or chronic health risks associated with the emergency, and where necessary, advice regarding medical attention for exposed individuals;
- Proper precautions, such as evacuation or sheltering in place; and
- The name and telephone number of a contact person.

A written follow-up notice must be submitted to the SERC and LEPC as soon as practicable after the release. The follow-up notice must update information included in the initial notice and provide information on actual response actions taken and advice regarding medical attention necessary for citizens that were exposed (EPA 2000).

Reporting Requirements

Under Occupational Safety and Health Administration (OSHA) regulations, employers must maintain a material safety data sheet (MSDS) for any hazardous chemicals stored or used in the work place. Approximately 500,000 products have MSDSs. Section 311 of EPCRA requires facilities that have MSDSs for chemicals held above certain quantities to submit either copies of their MSDSs or a list of MSDS chemicals to the SERC, LEPC, and local fire department. If the facility owner or operator chooses to submit a list of MSDS chemicals, the list must include the chemical or common name of each substance and must identify the type of hazard each substance presents (i.e., health, fire, explosive, or reactive hazard). If a list is submitted, the facility must submit a copy of the MSDS for any chemical on the list upon the request of the LEPC or SERC (EPA 2000).

Under Section 312 of EPCRA, facilities covered by Section 311 must submit annually a hazardous chemical inventory form to the LEPC, the SERC, and the local fire department. Facilities provide either a Tier I or Tier II form. Tier I forms include the following aggregate information for each hazard category:

- An estimate (in ranges) of the maximum amount of chemicals for each category present at the facility at any time during the preceding calendar year;
- An estimate (in ranges) of the average daily amount of chemicals in each category; and
- The general location of hazardous chemicals in each category.

The Tier II report contains basically the same information as the Tier I, but it must name the specific chemicals at a facility. Many states, including Washington, require Tier II information under state law. Tier II forms provide the following information for each substance:

- The chemical name or the common name as indicated on the MSDS;
- An estimate (in ranges) of the maximum amount of the chemical present at any time during the preceding calendar year and the average daily amount;
- A brief description of the manner of storage of the chemical;
- The location of the chemical at the facility; and
- An indication of whether the owner elects to withhold location information from disclosure to the public.

The information submitted under EPCRA Sections 311 and 312 is available to the public from LEPCs and SERCs. In 1999, the EPA excluded gasoline held at most retail gas stations from Section 311/312 reporting requirements. EPA estimates that about 550,000 facilities are now subject to these reporting requirements (EPA 2000).

Toxic Chemical Release Inventory

Section 313 of EPCRA (commonly referred to as the Toxics Release Inventory or TRI) requires certain facilities to complete a Toxic Chemical Release Inventory Form annually for specified chemicals. The form must be submitted to the EPA and the State on July 1 and must cover releases and other waste management of toxic chemicals that occurred during the preceding calendar year. One purpose of this reporting requirement is to inform the public and government officials about releases and other waste management of toxic chemicals so that sources may be tracked and overall waste streams analyzed. The following information is required on the form:

- The name, location, and type of business;
- Whether the chemical is manufactured, processed, or otherwise used and the general categories of use of the chemical;
- An estimate (in ranges) of the maximum amounts of the toxic chemical present at the facility at any time during the preceding year;
- Quantity of the chemical entering the air, land, and water annually;
- Off-site locations to which the facility transfers toxic chemicals in waste for recycling, energy recovery, treatment, or disposal; and

- Waste treatment/disposal methods and efficiency of methods for each waste stream.

In addition, the Pollution Prevention Act of 1990 requires collection of information on source reduction, recycling, and treatment. The EPA maintains a national TRI database, which is available on the EPA and other websites (EPA 2000).

EPCRA Enforcement

Section 325 of EPCRA allows civil and administrative penalties ranging up to \$75,000 per violation or per day per violation when facilities fail to comply with reporting requirements. Criminal penalties up to \$50,000 or five years in prison apply to any person who knowingly and willfully fails to provide emergency release notification. Penalties of not more than \$20,000 and/or up to one year in prison apply to any person who knowingly and willfully discloses any information entitled to protection as a trade secret.

Section 326 of EPCRA allows citizens to initiate civil actions against the EPA, the SERC, or the owner or operator of a facility for failure to meet EPCRA requirements. A SERC, LEPC, and state or local government may institute actions against facility owners/operators for failure to comply with EPCRA requirements (EPA 2000).

THE OIL POLLUTION ACT OF 1990

The federal Oil Pollution Act (OPA) of 1990 was enacted largely in response to public concern following the spilling of nearly 11 million gallons of oil by the *Exxon Valdez* into Prince William Sound, Alaska, in 1989; the largest oil spill in United States history (NOAA 2004). The OPA provided national planning and preparedness provisions for oil spills that are similar to EPCRA provisions for extremely hazardous substances. These provisions include new requirements for contingency planning by both government and industry. As a result, the National Oil Spill and Hazardous Substances Pollution Contingency Plan (more commonly called the National Contingency Plan or NCP) was expanded in a three-tiered approach: (1) the federal government is required to direct all public and private response efforts for certain types of spill events; (2) Area Committees, composed of federal, state, and local government officials, must develop detailed, location-specific Area Contingency Plans (ACPs); and (3) owners or operators of vessels and certain facilities that pose a serious threat to the environment must prepare their own facility response plans. The NCP, first authorized in the 1970 amendment to the Clean Water Act, is designed primarily as a response to oil spill events. The EPA has published regulations for aboveground and underground storage tank (UST) facilities, while the U.S. Coast Guard has published regulations for oil tankers. The OPA plans offer an opportunity for LEPCs to coordinate their plans with area and facility oil spill plans covering the same geographical area (EPA 2003a).

The OPA also created the national Oil Spill Liability Trust Fund, which is available to provide up to one billion dollars per spill incident when the responsible party is incapable or unwilling to clean up the spill. In addition, the OPA increased penalties for regulatory noncompliance, broadened the response and enforcement authorities of the federal government, and preserved state authority to establish law governing oil spill prevention and response.

THE CLEAN AIR ACT

The 1970 Clean Air Act (CAA) gave the EPA the authority to list air toxins for regulation and then to regulate the chemicals. The 1990 Clean Air Act amendments include a list of 189 hazardous air pollutants selected by Congress on the basis of potential health and/or environmental hazard. The EPA must regulate these listed air toxins. The 1990 amendments allow EPA to add new chemicals to the list as necessary. The EPA refers to chemicals that cause serious health and environmental hazards as hazardous air pollutants (HAPs) or air toxins and issues regulations for large and small sources of the chemicals that threaten human health and the environment (EPA 1993).

Large sources of hazardous air pollutants include oil refineries, electrical generation plants, chemical factories, and incinerators. The 1990 CAA requires large sources to use Maximum Available Control Technology (MACT) to reduce pollutant releases. While this very high level of pollution control has posed a heavy burden on some industries, many industry executives agree that it forced them to examine the level of chemicals they store and emit and whether less threatening chemicals could be used in their production processes (EPA 1993).

Although the 1990 CAA deals more strictly with large sources than small ones, the EPA also regulates small sources of hazardous air pollutants. Many small businesses, such as dry cleaners or auto body paint shops, are sources of air toxins. Under the 1990 CAA, the EPA is required to study whether and how to reduce hazardous air pollutants from small neighborhood polluters such as auto paint shops, print shops, and other similar activities. The EPA must also examine air pollution after the first round of regulations to see whether the remaining health hazards require further regulatory action (EPA 1993).

To improve spill prevention and response, the 1990 CAA amendments also require the EPA and OSHA to issue regulations for chemical accident prevention. Under CAA Section 112(r), all chemical facilities with processes that exceed a threshold quantity for one of 77 acutely toxic substances (such as chlorine and ammonia) or one of 63 highly volatile, flammable substances (when not used as a fuel) must develop a Risk Management Program to identify and evaluate hazards and manage those hazards safely. An example of a facility subject to the Risk Management Program requirements would be a drinking water treatment plant holding more than 2,500 pounds of chlorine. All facilities subject to these requirements must submit a summary of their program, known as a Risk Management Plan (RMP), to the EPA or to an agency delegated by the EPA to implement the CAA. The RMP for a facility includes (EPA 2002):

- Hazard assessments for the facility, including worst-case release and alternative release scenarios;
- Accident prevention activities for the facility, such as the use of special safety equipment, employee safety training programs, and analyses of process safety hazards conducted by the facility;
- Descriptions of past chemical accidents at the facility;

- The management system in place at the facility; and
- The emergency response program at the facility.

Before September 11, 2001, the information from RMPs that have been submitted could be reviewed in a public access database called RMP*Info on the EPA Chemical Emergency Preparedness and Prevention Office website (www.epa.gov/ceppo). In response to the terrorism threat, the EPA removed the database from its website. In addition to the RMP database information, SERCs, TERCs, and LEPCs can access off-site consequence analysis (OCA) information about facilities that have submitted an RMP. A TERC or tribal LEPC member can receive the information directly from the EPA for official use (e.g., to incorporate the information into emergency preparedness plans) (EPA 2002).

Tribes that the EPA finds eligible for treatment in the same manner as a state under the CAA Tribal Air Rule (40 CFR Part 49) can apply for authorization to administer the RMP program. If the tribe passes its own chemical safety legislation, it should ensure that its program is at least as stringent as the federal law in order to strengthen enforcement capabilities (EPA 2002).

LUMMI NATION TITLE 17: WATER RESOURCES PROTECTION CODE

The Lummi Natural Resources Department administers the Water Resources Protection Code, Title 17 of the Lummi Nation Code of Laws, as part of its Comprehensive Water Resources Management Program (CWRMP). The CWRMP includes wellhead protection, storm water management, wetland management, nonpoint source pollution management, and water quality standards programs. Provisions of Title 17 that work to protect the surface and ground water of the Reservation from the adverse effects of pollution include permit requirements for discharges, the establishment of sanitary control areas around wells and springs, prohibition of landfills in Wellhead Protection Areas, and a permit requirement for activities that would introduce pollutants to wetlands or result in a physical or chemical change of wetland water quantity and quality.

Appendix B: Federal, State, and Local Spill Response Resources

As described in Appendix A, federal legislation has been the stimulus for the development of federal, state, regional, and local spill response plans and systems. Because it may not be feasible for any one agency or jurisdiction to respond effectively to every possible spill incident, coordination between various agencies and jurisdictions is essential to maximize the effectiveness of spill response. This section describes in general the plans and systems at the federal, state, and local levels that address the Reservation and surrounding area. Table 2.2 in the text of the SPRP summarizes the plans discussed.

FEDERAL PLANS AND RESOURCES

As described above, the CWA required the development of the National Contingency Plan (NCP); Area Contingency Plans; response plans for tank vessels, offshore facilities, and certain onshore facilities; emergency response drills; inspection of response equipment; and the listing of hazardous substances other than oil. It also required establishment of the National Response System, the National Response Team, the National Response Center, the National Response Unit and Coast Guard Strike Teams, Regional Response Teams, Area Committees, Coast Guard District Response Groups, and federal On-Scene Coordinators (OSCs). These plans and resources, discussed below, are designed to provide an integrated system for spill response throughout the United States.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP)

The National Contingency Plan (NCP) is the federal plan for responding to both oil spills and hazardous substance releases. It is the result of efforts to develop a national response capability and promote overall coordination among the hierarchy of responders and contingency plans. When first developed in 1968, the NCP provided the first comprehensive system of accident reporting, spill containment, and cleanup, and established a national response headquarters, a national reaction team, and regional reaction teams. As required by the CWA of 1972, the NCP was revised to include a framework for responding to hazardous substance spills as well as oil discharges. Following the passage of Superfund legislation in 1980, the NCP was broadened to cover releases at hazardous waste sites requiring emergency removal actions. Other legislation has required additional revisions to the NCP. The latest revisions to the NCP were finalized in 1994 to reflect the oil spill provisions of the Oil Pollution Act of 1990 (EPA 2003a).

Federal On-Scene Coordinators (OSCs) are the federal officials predesignated by the EPA and the U.S. Coast Guard (USCG) to coordinate all federal containment, removal, and disposal efforts and resources during an incident under the NCP. The federal OSC is the point of contact for the coordination of federal efforts with those of the local response community. Under the NCP the OSC has the ultimate responsibility to assure protection of the public and the environment (NRT 1999). An OSC also coordinates, directs, and reviews the contingency planning work of various planners including Area Committees, responsible parties, and contractors.

The NCP describes the National Response System (NRS) and establishes the National Response Team and the 13 Regional Response Teams. The National Contingency Plan (NCP) and National Response System (NRS) were developed to ensure that the resources and expertise of the federal government are available immediately for oil or hazardous substance releases that are beyond the capabilities of local and state responders. The NCP provides the framework for the NRS and establishes how it works. The NRS responds to a wide range of oil and hazardous substance releases. It is a multi-layered system of individuals and teams from local, state, and federal agencies; industry; and other organizations that share expertise and resources to ensure that oil spill control and cleanup activities are timely and efficient and that they minimize threats to human health and the environment (EPA 2003b). The NRS includes four levels of contingency planning (federal, regional, area and local, and site-specific industry) that guide response efforts and provides a framework for coordination among these levels (NRT 1998).

The federal team component of the National Response System is the National Response Team: a group of representatives from 16 federal agencies that is the primary planning, policy, and coordination organization for emergency response to spills. This interagency team is chaired and vice-chaired by the EPA and the U.S. Coast Guard, respectively. Rather than directly participating in a response, the NRT is responsible for three major response management activities: (1) distributing information; (2) planning for emergencies; and (3) training for emergencies, as well as managing the National Response System (NRS).

The NRT operates the National Response Center (NRC) which is the single point of contact for all pollution reporting (NRT 1999). The NRT also monitors the Regional Response Teams (RRTs) in their development and implementation of Regional Contingency Plans (RCPs) required by the NCP.

National Contingency Plan (NCP)

- Required by CWA and expanded by CERCLA and OPA
- Federal plan for response to oil and hazardous substance releases
- Provides national response capability
- Promotes coordination among responders and plans
- Establishes the NRT and 13 RRTs
- Describes the NRS

National Response System (NRS)

- Coordinates agencies for a focused response
- Includes four levels of contingency planning: federal, regional, area, and local
- Requires development of Regional Contingency Plans by RRTs
- Is 3-tiered: NRT, RRT, OSC

National Response Team (NRT)

- Chaired by EPA, USCG serves as Vice-Chair
- Membership of 16 federal agencies
- Three major activities
 1. information distribution
 2. emergency planning
 3. emergency training
- manages the NRS
- operates the NRC
- monitors Regional Response Teams

Regional Response Team (RRT)

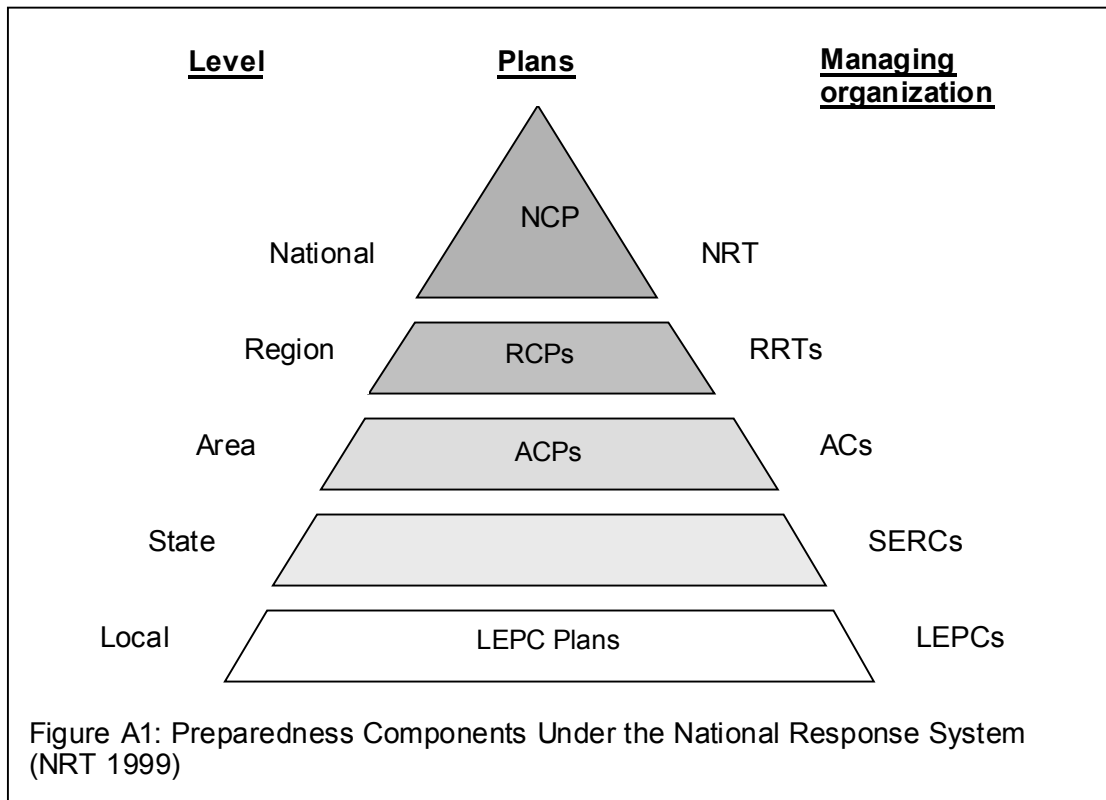
- Develops RCP to define roles of responders
- Co-chaired by EPA and USCG
- Provides assistance as requested by OSC
- May request assistance from NRT

Area Committees

- Develop Area Contingency Plans with detailed response information
- ACP must be consistent with local LEPC response plan

The Regional Response Teams (RRTs, which include the same federal agencies that form the NRT as well as a representative from each state in the region) develop the Regional Contingency Plan for each federal region. The Regional Contingency Plan defines the roles and responsibilities of federal, state, local, and other responders for incident response within the region. In the Pacific Northwest region, the Northwest Area Contingency Plan (NWACP), required by the Oil Pollution Act, serves as the Regional Contingency Plan as well as the Area Contingency Plan for the Washington, Oregon, and Idaho area (NRT 1998).

The OPA required the federal OSCs responsible for the coastal zone to chair Area Committees (ACs). Under the oversight of the OSC, the AC is responsible for developing an Area Contingency Plan (ACP) and working with federal, state, and local officials to enhance contingency planning and pre-plan joint response efforts (NRT 1999). The ACP must be produced in consultation with the appropriate SERCs and LEPCs and provide detailed information on response procedures, priorities, and appropriate countermeasures for spills in that area. A Local Emergency Planning Committee can request that Regional Response Team review of a local emergency plan.



The NRS operates beginning with identification of the spill at the local, area level. Local responders (i.e. the responsible parties, the local fire and police departments) are the first to respond but state responders can take over if the incident is beyond local capacity. The EPA operates the Local Governments Reimbursement program to reimburse local governments or Indian tribes up to \$25,000 per incident for un-budgeted response efforts (EPA 2003b). Anyone discovering a hazardous substance release or

oil spill is encouraged to contact the NRC using its toll-free number. By law, the NRC must be contacted if the spill exceeds chemical-specific reportable quantities established by the EPA. In this case, the NRC then notifies the OSC responsible for the area of the incident. The OSC determines the status of the local response and monitors the situation to determine whether, or how much, federal involvement is necessary and ensures that the cleanup, by any sector, is appropriate, timely, and minimizes human and environmental damage. The OSC may request assistance from a number of special response teams, the NRT, and the RRT. The NRC collects available information on the details of the incident and maintains reports of all incidents (EPA 2003b). The effectiveness of response to major incidents is assessed by the National Response Team. These “lessons learned” are used to make recommendations for improving the National Contingency Plan and the National Response System.

Incident Command System/ Unified Command (ICS/UC)

The hierarchical, cross-jurisdictional, approach of the NRS is the result of application of the Incident Command System/ Unified Command (ICS/UC). ICS is a standardized on-scene incident management concept designed specifically to allow responders to adopt an integrated organizational structure equal to the complexity and demand of any single incident or multiple incidents w/o being hindered by jurisdictional boundaries (NRT date unknown). The National Contingency Plan states that the NRS will function as an ICS under the direction of the federal On-Scene Coordinators; its use is also endorsed by the NRT and the RRTs. In 1980, federal officials transitioned ICS into a national program called the National Interagency Incident Management System (NIIMS) and its use has since been endorsed or mandated by many federal agencies (NRT date unknown). ICS divides emergency response into five manageable functions: command, operations, planning, logistics, and finance and administration.

Unified Command (UC) is a structure that brings together the incident commanders established by ICS of all major organizations involved in the incident to coordinate and effective response to large, multi-jurisdictional incidents. The makeup of each UC depends on the details of the incident, existing response plans, and decisions made in the initial UC meeting. They must at least have jurisdictional authority and the resources to support participation in the response. The responsibilities of the UC include developing incident objectives and priorities, providing agency or company resources, and agreeing on logistical support procedures.

REGIONAL PLANS AND RESOURCES

Northwest Area Contingency Plan

As required by the Oil Pollution Act of 1990, the Northwest Area Contingency Plan (RRT 2003) is the response plan developed for the Washington, Oregon, and Idaho area by the Regional Response Team for Region 10. The Northwest Area Contingency Plan (NWACP) identifies resources at risk, response resources, and cleanup strategies within its area. The general goals of such a plan are to (RRT 2002a):

- Protect the safety of the public and the spill responders;
- Stabilize the source to stop the release of additional oil into the environment;

- Protect sensitive areas to limit the damage caused by the spilled oil;
- Collect and recycle or dispose of oil;
- Rehabilitate wildlife; and
- Implement an appropriate cleanup strategy for impacted areas.

The NWACP improves response efforts by proactively identifying resources at risk, protection priorities, available equipment, and response personnel in advance so that the first response is initiated while, rather than after, incident-specific priorities are determined. The response techniques employed in a spill are dependent upon the product spilled, quantity, location, response time, weather conditions, responder capability, and availability of response equipment. The NWACP identifies the appropriate conditions for the various spill response techniques such as mechanical containment and recovery, dispersants, in-situ burning, shoreline cleanup, and natural removal.

The NWACP also includes a manual and a series of matrices to be used as a tool for shoreline countermeasure response. Shoreline countermeasures are a critical element affecting the environmental impact and cost resulting from a spill. Local response organizations and agencies have developed mechanisms for identifying shorelines requiring treatment, establishing treatment priorities, monitoring the effectiveness and impacts of treatment, and for resolving problems as the treatment progresses. Each section of the manual has been adapted to the specific environments, priorities, and treatment methods appropriate to the planning area. These elements provide the information needed to select cleanup methods for specific combinations of shoreline and oil types (Ecology 2003a).

Geographic Response Plans

Geographic Response Plans (GRPs) are oil spill response plans for public coastal and inland waters. They are considered part of the NWACP, but are distributed and revised separately. Each GRP has two priorities: (1) to identify sensitive natural and cultural resources in a specific geographic region and (2) to describe and prioritize response strategies to protect these resources during the initial phase of an oil spill. Currently, all coastal and selected inland water areas in Washington and Oregon are covered by the 24 regional GRPs (RRT 2002).

Each GRP contains a list of pre-planned response strategies that can be put into effect immediately by initial responders to protect critical public resources during the first few hours of an oil spill. This strategy list serves as the action plan for federal and state OSCs and others entities responding to a spill. Once a coordinated response has been established, the GRP protection strategies are refined and supplemented based on real-time assessments. Each regional GRP includes spill contact information, site descriptions, reference maps, prioritized response protection strategies, shoreline information, sensitive resource descriptions, and logistical information. The logistical support section includes information such as locations of local equipment and personnel, local facilities, site access, local experts, and potential wildlife rehabilitation centers. Oil spill response contractors frequently test specific GRP strategies at the actual site. Testing provides an opportunity for response contractors to verify feasibility, deploy

equipment, and train personnel to ensure that they are prepared for a real oil spill (RRT 2002).

The GRPs only address the protection of sensitive public (not private) resources, and not all sensitive resources can be protected. The protection strategies in the GRPs have been designed for use with persistent oils and may not be suitable for other petroleum or hazardous substances. In addition, environmental conditions (e.g., wind, currents, and tides), together with the physical limitations of existing spill response technology, may preclude the effective protection of some areas. The development of any protection strategies for private economic resources (including, but not limited to, commercial marinas, private water intakes, non-release aquaculture facilities) are the responsibility of the private resource owner or the responsible party (RRT 2002).

The Department of Ecology (Ecology) is responsible for maintaining, updating, and distributing GRPs for Washington and the Lower Columbia River. Response strategies are refined and updated as a result of field visits and tests, oil spill drills, and the lessons learned from actual oil spills. Current versions of the GRPs are posted on the Northwest Area Committee/Regional Response Team website at: <http://www.uscg.mil/d13/m/nwac/nwac.html>. Using GRPs is a proven process that has become part of the standard pollution response of the Northwest Area (RRT 2002).

The waters adjacent to the Lummi Reservation are addressed in the San Juan Islands/ North Puget Sound GRP (Ecology 2003a). This GRP identifies:

- Resources needing protection (including sensitivity of shoreline types and shoreline type maps);
- Response resources (e.g., boom, boat ramps, and vessels) needed;
- Site access and staging areas;
- Tribal and local response community contacts; and
- Local conditions (e.g., physical features, hydrology, currents and tides, winds, and climate) that may affect response strategies.

The response strategies in the GRP were developed based on the sensitive resources identified, hydrology, and climactic considerations. Individual strategies, which are specific to a location, identify the amount of boom necessary for implementation. The response strategies are then prioritized based on potential spill origins and trajectory modeling, taking into account factors such as resource sensitivity, feasibility, wind, and tidal conditions (Ecology 2003a). Maps of boom locations in the Reservation area are shown in Figures 3.1, 3.2, and 3.3.

Pacific States/British Columbia Oil Spill Task Force

The Pacific States/British Columbia Oil Spill Task Force was formally created by a Memorandum of Cooperation (MOC) signed in 1989 by the Governors of Alaska, Washington, Oregon, and California and the Premier of British Columbia following the Nestucca and Exxon Valdez oil spills. These events highlighted the common concerns shared by the West Coast states and the Province of British Columbia, Canada, related to spill risks from coastal vessel traffic routes, the need for cooperation across shared

borders, and a shared commitment among West Coast citizens of both the U.S. and Canada to protect their unique marine resources.

In June 2001, a revised Memorandum of Cooperation was written to include the State of Hawaii and a focus on spill preparedness and prevention needs for the 21st century. The continuing focus of the Task Force is on fostering regulatory consistency, sharing information and resources, and coordinating development and implementation of new policies and programs to reduce the risk of marine oil spills.

The Oil Spill Task Force published a major report in October of 1990 that included 46 joint recommendations for spill prevention and response, as well as a number of recommendations specific to each member jurisdiction. Most of these recommendations have since been incorporated into state or provincial statutes, rules, or programs; they are also reflected in the U.S. Federal Oil Pollution Act of 1990 (OPA), as well as the Canadian Shipping Act Amendments adopted in 1993.

STATE PLANS AND RESOURCES

The Ecology Spill Prevention, Preparedness, and Response (Spills) Program implements Washington laws pertaining to oil and hazardous substance spills, including:

- Chapter **90.56** RCW, Oil and Hazardous Substance Spill Prevention and Response
- Chapter **88.46** RCW, Vessel Oil Spill Prevention and Response
- Chapter **90.48** RCW, Water Pollution Control

The Spills Program carries out a number of prevention activities, including:

- Performing vessel screening, inspection, and oil transfers;
- Participating in the operation of the Neah Bay Rescue Tug;
- Conducting incident investigations;
- Reviewing oil spill prevention plans and operation manuals for oil-handling facilities; and
- Assessing and managing spill risk.

Since the first few hours of a spill are crucial to minimizing impacts, an effective response to a spill must begin immediately if damages are to be minimized. The state-approved spill contingency plans maintained by regulated vessels and facilities help assure that companies have a spill response contractor on retainer and have a plan to respond to spills immediately with the proper equipment and trained personnel. Ecology activities to improve preparedness include review and approval of oil spill contingency plans from facilities and vessels, participation and evaluation of spill drills, and participation in the development of Geographic Response Plans.

Ecology responds directly to both accidental and intentional releases of oil and hazardous materials. These activities include:

- **24-Hour Statewide Response:** The agency provides round-the-clock response to oil and hazardous material spills that pose a risk to public health, safety, and the environment. Incidents may be co-managed with the responsible party and local, tribal, and federal emergency response personnel.

- Methamphetamine Drug Lab Cleanup: Ecology spill responders work with law enforcement personnel to dispose of drug lab chemicals from the sites of illicit methamphetamine drug labs and lab dumps
- Compliance and Enforcement: Ecology can take enforcement and compliance actions for violations related to oil and hazardous material spills, including imposing fines and requiring changes in operating practices to prevent future spills.
- Natural Resource Damage Assessment and Restoration: When an oil spill causes significant damage to publicly owned natural resources, Ecology coordinates assessment of the degree of damage and acquisition of fair compensation from the responsible party(ies) through the Natural Resources Damage Assessment Committee. Ecology works with other organizations to use the collected monies (the Coastal Protection Fund) for restoration of the lost resources.

Under a 2001 memorandum of agreement on oil spills, Ecology and the U.S. Coast Guard are developing a cooperative vessel inspection program, sharing information, and monitoring oil transfer operations. Other joint initiatives include implementing recommendations from the North Puget Sound Oil Spill Risk Management Panel, managing the risk of oil spills in Haro Strait and on the Columbia River, and working with the Pacific States/British Columbia Oil Spill Task Force to implement a coastal vessel risk management system from California to Alaska.

The state rules for facility and vessel oil spill contingency plans were adopted by Ecology in 1991 and 1992. Recent drills have identified gaps in the ability of industry contingency plan holders to respond to a probable worst-case oil spill. Ecology is updating its rule to strengthen spill response standards, establish salvage and other vessel emergency service standards, improve the drill program, and make other necessary changes.

LOCAL PLANS AND RESOURCES

Local emergency response plans are produced by Local Emergency Planning Committees (LEPCs). The LEPCs have membership from government agencies, including local fire, police, and emergency managers; industry; citizens; and other interested parties. These plans guide local efforts in responding to an oil or hazardous materials spill. The only LEPC in the Reservation area is the Whatcom County LEPC, which has produced a Hazardous Materials Plan (Whatcom County 2001) that meets the community planning requirements of Section 303 of EPCRA. A hazard analysis demonstrated that such a plan was necessary because of the transportation and storage of hazardous chemicals and oil in the area (Whatcom County 2001). The Lummi Nation has coordinated with the Whatcom County Division of Emergency Management (WCDEM) during past spill response efforts. Future coordination should benefit both jurisdictions.

In 1997, a public/private cooperative effort resulted in the establishment of the Whatcom County Specialized Emergency Response Program (SERP), a non-profit, 501(3)c corporation that was organized to support response needs of local public safety agencies. The SERP currently administers the Hazardous Materials Unit, the Major Incident Support Team (MIST), and the Community Alert Network (CAN). The SERP is managed and staffed by volunteers from local emergency response organizations and

funded through grants, local industries, and the WCDEM. The first initiative of the SERP was to develop a well-equipped, well-trained hazardous materials response team. The Hazmat Unit is available for 24 hour on-call response to nearly any Hazmat Level II or III incident, excluding cleanup of clandestine drug labs. Other hazmat teams in the area are at the larger fixed facilities, the Surrey Fire Department in British Columbia, and by request, through the state Emergency Management Division Duty Officer.

The Major Incident Support Team (MIST) was established under the Whatcom County SERP in 2003 (City of Bellingham 2003). It is funded by a combination of grants and donations, with start up funding provided by the ConocoPhillips and BP Cherry Point refineries. The MIST team was formed to assist local agencies in successfully managing major emergency incidents. Any city or agency in the Whatcom County area may request the assistance of MIST on a 24-hour, on-call basis through the WCDEM. Team members initially completed a 40-hour course on the National Interagency Incident Management System (NIIMS) and are trained in the five functions of the Incident Command System.

The Community Alert Network (CAN) is an emergency notification program that calls every home phone in a specified area within minutes to deliver emergency instructions (e.g., shelter in place or quickly evacuate). In case of an emergency, the CAN program allows emergency officials to record a message that provides specific instructions to residents on how they should respond to the emergency. The company that provides the service enters the location information for the hazard area into their computer system and the system delivers the message to all the homes in the area (Crawford 2004).

The larger fixed facilities in the area have in-house hazardous materials response teams that may be accessed for additional assistance or technical expertise. Another hazmat team is at the Surrey Fire Department, which maintains a fully equipped hazardous materials response team in Lower Mainland British Columbia that may be available for mutual aid responses. Other hazmat emergency response teams may be requested through the state Emergency Management Division Duty Officer. Also, the state Fire Mobilization Act may be invoked in the event of a major chemical incident requiring long-term operations by regional or state resources (Whatcom County 2001).

FACILITIES AND VESSELS

In the final tier of plans forming the National Response System are Facility Response Plans and Vessel Response Plans. These are required for oil cargo handling facilities or vessels. These plans detail pollution response action plans for the specific facility or vessel, and must be submitted for review and approval to the EPA or USCG, depending on the threat to the environment. Facilities that store large volumes of highly flammable or toxic chemicals are required to develop and implement Risk Management Plans that outline how the facility will prevent and respond to a release. These response plans represent the first line of defense against the impacts of a hazardous materials spill.

The National Response Team has developed an Integrated Contingency Plan (ICP or "One Plan") Guidance that provides a way to consolidate the multiple plans that a facility may have prepared to comply with various regulations into one functional emergency response plan. In addition to consolidating their existing plans, facilities can use the ICP

Guidance to simplify their plan development and update process. The ICP Guidance is also intended to improve coordination of response activities within the facility and with outside responders. The ICP format is based on the Incident Command System (ICS), which allows the plan to dovetail with established response management practices and promote the usefulness of any given plan in an emergency (NRT 1998).

Facilities near the Reservation that have prepared ICP response plans and/or Clean Air Act Risk Management Plans include:

- British Petroleum (BP) Cherry Point Oil Refinery (formerly ARCO)
- ConocoPhillips Oil Refinery (formerly Tosco/Mobil)
- ALCOA-Intalco Works Aluminum Smelter
- Tenaska Cogeneration Plant
- Georgia-Pacific West Paper Mill
- BP Olympic Pipeline (Gasoline, Jet Fuel)
- Terasen Pipeline (Crude Oil)
- Cascade Natural Gas Pipeline

Appendix C: Draft Lummi Nation Comprehensive Emergency Management Plan

Appendix D: Incident Command System / Unified Command Structure and Technical Assistance Document

Appendix E: OSHA Training Requirements for Spill Response Workers

Appendix F: Contents of Lummi Nation Spill Response Binder